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THE

EXECUTIVE DOCUMENTS

OF THE

HOUSE OF REPRESENTATIVES

FOR THE

FIRST SESSION OF THE FIFTIETH CONGRESS.

1887-'88.

IN THIRTY-TWO VOLUMES.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 31.

TREASURY DEPARTMENT, Document No. 1074. Secretary—W. E. & A.

COMPENSATION OF POSTMASTERS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Schedules allowed by the Auditor of the Treasury for the Post-Office Department for compensation of postmasters, readjusted under the act of March 3, 1883, and miscellaneous claims on account of the postal service, payable from the appropriation for "deficiency in the postal revenues, 1885 and prior years."

DECEMBER 22, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December* 21, 1887.

SIR: I have the honor to transmit herewith, in compliance with section 2 of the act of July 7, 1884 (23 Stat., p. 254), schedules of claims allowed by the Auditor of the Treasury for the Post-Office Department on account of compensation of postmasters, readjusted under the act of March 3, 1883, amounting to $380,321.44, and miscellaneous claims on account of the postal service, amounting to $3,382.43, in all $383,703.87, payable from the appropriation "deficiency in the postal revenues, 1885 and prior years."

Respectfully yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Estimates for the payment of claims.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10549	John S. Evans, Fort Sill, Ind. T	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues 1885 and prior years.	1872 and 1874	$22.86
10550	John W. Staples, Tahlequah, Ind. T	do	1870 and 1872	52.90
	do	do	1872 and 1873	27.95
10551	L. Y. Staples, Tahlequah, Ind. T	do	1873 and 1874	20.96
10552	Joel J. Sperry, Abingdon, Iowa	do	1866 and 1867	46.93
10553	John E. Williams, Adel, Iowa	do	1871 and 1872	173.61
10554	Wm. Eastridge, Adelphi, Iowa	do	1866 and 1868	33.80
	do	do	1868 and 1870	5.78
	do	do	1872 and 1874	6.60
10555	Orlando W. Ickis, Afton, Iowa	do	1870 and 1872	321.38
10556	J. Myers, Agency City, Iowa	do	1866 and 1868	154.00
10557	Edwin Supplee, Ainsworth, Iowa	do	do	163.34
10558	W. A. Walker, Ainsworth, Iowa	do	1868 and 1870	79.76
10559	Wesley B. Stevens, Allen's Grove, Iowa	do	1872 and 1874	27.34
10560	Mathias Endeus, Allison, Iowa	do	1870 and 1872	7.98
	do	do	1872 and 1874	32.53
10561	Joseph B. Dunham, Almoral, Iowa	do	1866 and 1868	17.06
	do	do	1868 and 1870	9.88
	do	do	1870 and 1872	12.42
	do	do	1872 and 1874	10.04
10562	C. C. Yoder, Amish, Iowa	do	1871 and 1872	3.75
	do	do	1872 and 1874	18.86
10563	Chas. Stier, Amity, Iowa	do	1866 and 1868	18.54
10564	Alex. Chrystie, Applington, Iowa	do	1872 and 1874	66.68
10565	S. Y. Pryor, Arbor, Iowa	do	1866 and 1868	4.54
	do	do	1872 and 1874	12.22
10566	James Leech, Argo, Iowa	do	1866 and 1867	6.45
10567	Mathew Irwin, Argo, Iowa	do	1867 and 1868	10.76
	do	do	1870 and 1871	2.09
10568	Abel W. Roberts, Ashland, Iowa	do	1866 and 1867	37.96
10569	John Jones, Ashland, Iowa	do	1872 and 1874	8.79
10570	Nathan Holman, Atlanta, Iowa	do	1866 and 1867	6.30
10571	M. Benton, Atlanta, Iowa	do	1867	7.93
10572	Wm. Thomas, Attica, Iowa	do	1866	22.98
10573	J. A. Welch, Attica, Iowa	do	1867 and 1868	68.95
10574	E. E. Roberts, Auburn, Iowa	do	1866 and 1867	10.67
10575	John Fuhs, Baden, Iowa	do	1866 and 1868	30.74
10576	Edward Busse, Barclay, Iowa	do	1868 and 1870	13.74
10577	Hiram Greenland, Batavia, Iowa	do	1870 and 1872	86.24
10578	J. L. Earnest, Beetrace, Iowa	do	1866 and 1868	14.78
	do	do	1868 and 1870	10.26
10579	A. Longcor, Belfast, Iowa	do	do	20.06
10580	S. S. Walker, Belinda, Iowa	do	1870 and 1872	6.38
	do	do	1872 and 1874	19.00
10581	J. R. Barnes, Bellefontaine, Iowa	do	1866 and 1868	109.92
	do	do	1868 and 1869	9.77
10582	Mrs. Ann Appleton, Bentonsport, Iowa	do	1872 and 1874	71.72
10583	S. W. Campbell, Bertram, Iowa	do	1866 and 1867	9.70
10584	R. W. Knowles, Bertram, Iowa	do	1867 and 1868	21.46
10585	E. M. Aiken, Bethel, Iowa	do	do	8.37
10586	John Sivil, Big Mound, Iowa	do	1866 and 1868	106.77
10587	Chas. F. Blair, Big Mound, Iowa	do	1868	4.59
	do	do	1870 and 1871	23.60
10588	H. V. Evans, Big Mound, Iowa	do	1871 and 1872	16.76
	do	do	1872 and 1874	29.68
10589	Henry C. Clinton, Birmingham, Iowa	do	1866 and 1868	103.29
10590	Frederick B. Huffman, Birmingham, Iowa	do	1870 and 1872	94.70
10591	J. J. Grossman, Bluffton, Iowa	do	1873 and 1874	21.66
10592	Chas. Wrede, Bon Accord, Iowa	do	1866 and 1867	6.97
10593	Henry Largenburg, Bon Accord, Iowa	do	1867 and 1868	5.42
10594	John M. Brainard, Boone, Iowa	do	1873 and 1874	297.73
10595	I. P. Wyland, Botany, Iowa	do	1866 and 1868	13.44
10596	Moses Perley, Bowen's Prairie, Iowa	do	do	27.12
	do	do	1868 and 1870	8.62
	do	do	1870 and 1872	19.72
	do	do	1872 and 1874	15.86
10597	Henry J. Playter, Boylan's Grove, Iowa	do	1868	7.05
	do	do	1873 and 1874	21.07
10598	W. H. Krout, Braddyville, Iowa	do	1872	10.87
10599	Adam B. Edward, Brandon, Iowa	do	1866 and 1868	17.99
10600	J. Keeler, Bristol, Iowa	do	1868	1.94
	do	do	1868 and 1869	14.55
10601	Wm. H. Tucker, Brooks, Iowa	do	1873 and 1874	24.48
10602	S. H. Judd, Brownville, Iowa	do	1869 and 1870	4.00
	do	do	1870 and 1872	38.28

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10603	Daniel Connell, Buckingham, Iowa	Compensation of postmasters readjusted, etc.	1872 and 1873	$50.70
10604	Aurelia Churchill, Buena Vista, Iowa	do	1866 and 1868	20.42
10605	Henry Darman, Buffalo, Iowa	do	do	39.14
	do	do	1872 and 1874	35.16
10606	Wm. Castle, Buffalo Grove, Iowa	do	1866 and 1867	9.93
10607	D. D. Comstock, Burgess, Iowa	do	1870 and 1872	22.57
10608	L. W. Bryson, Burke, Iowa	do	1866 and 1868	11.38
	do	do	1868 and 1870	30.34
	do	do	1872 and 1874	11.86
10609	T. R. J. Ellis, Cairo, Iowa	do	1866	2.11
10610	Robert E. Houck, Calamus, Iowa	do	1870 and 1872	77.70
10611	T. B. Maring, Caldwell, Iowa	do	1866 and 1868	23.48
10612	George F. Walter, Caledonia, Iowa	do	1866 and 1867	1.43
10613	General S. Moore, Caledonia, Iowa	do	1867 and 1868	1.42
	do	do	1868 and 1870	4.26
10614	Solomon McNeill, Caloma, Iowa	do	1866	2.27
10615	Thomas W. J. Long, Camanche, Iowa	do	1868	9.43
10616	A. L. Hart, Cambria, Iowa	do	1866 and 1867	2.45
10617	A. M. Gillett, Cambridge, Iowa	do	1870 and 1872	60.42
	do	do	1872	20.57
10618	J. D. Breezley, Cambridge, Iowa	do	1873 and 1874	73.24
10619	E. S. Cowles, Campton, Iowa	do	1866 and 1868	14.02
10620	L. B. Sutton, Canton, Iowa	do	1866 and 1867	44.53
10621	H. W. Jones, Cardiff, Iowa	do	1866 and 1868	14.20
	do	do	1868 and 1869	1.05
10622	J. Needham, Cassady's Corners, Iowa	do	1866 and 1868	20.52
10623	John C. Whitmore, Casey, Iowa	do	1872 and 1874	75.95
10624	F. A. Day, Castana, Iowa	do	1870 and 1871	10.90
10625	S. Chamberlin, Cascade, Iowa	do	1866 and 1868	114.68
10626	Jacob A. Ommen, Castle Grove, Iowa	do	1870 and 1872	11.40
	do	do	1872 and 1874	6.26
10627	James M. Long, Cedar Bluff, Iowa	do	1866 and 1868	50.72
10628	James Slife, Central City, Iowa	do	1868	6.72
	do	do	1868 and 1870	12.00
10629	J. M. Potter, Centre Point, Iowa	do	1867 and 1868	57.87
10630	Elizabeth Barrett, Centre Point, Iowa	do	1866 and 1867	43.46
10631	Wm. S. Manson, Centreville, Iowa	do	1872 and 1874	328.98
10632	George Diser, Chandalier, Iowa	do	1870 and 1871	7.99
10633	A. S. Ross, Chapin, Iowa	do	1868	2.43
10634	Wm. M. Dickey, Chatham, Iowa	do	1867 and 1868	20.85
	do	do	1868 and 1870	18.58
10635	Martin Smith, Chelsea, Iowa	do	1870 and 1872	55.37
10636	Carlton Corbett, Cherokee, Iowa	do	1866 and 1868	10.68
10637	William Waite, Chickasaw, Iowa	do	1872 and 1874	28.66
10638	J. J. Ellison, Chillicothe, Iowa	do	1870	7.52
10639	S. P. Heacock, Chillicothe, Iowa	do	1871 and 1872	20.01
	do	do	1872 and 1873	25.00
10640	J. C. Calvin, Christiansburg, Iowa	do	1870 and 1871	1.97
10641	William Sayres, Cincinnati, Iowa	do	1866 and 1868	107.12
	do	do	1868 and 1870	20.82
10642	Antony Lorang, Clarinda, Iowa	do	1872 and 1874	196.02
10643	M. Meacham, Clay, Iowa	do	1866 and 1868	15.68
	do	do	1868 and 1870	20.32
10644	John W. Jenkins, Clayford, Iowa	do	1866 and 1868	77.72
	do	do	1868 and 1870	48.00
	do	do	1870 and 1872	20.14
10645	Myron C. Walters, Clay Mills, Iowa	do	1866 and 1868	14.68
	do	do	1868 and 1870	7.36
	do	do	1870 and 1872	15.24
	do	do	1872 and 1874	15.08
10646	Geo. W. Merrill, Clifton, Iowa	do	1866	10.56
10647	John H. Stier, Clyde, Iowa	do	1866 and 1868	8.92
	do	do	1870 and 1871	5.14
10648	Asa Branson, Coal Creek, Iowa	do	1870 and 1872	23.82
10649	Jas. M. Potts, Colesburgh, Iowa	do	1867 and 1868	89.70
10650	D. R. Pollock, College Springs, Iowa	do	1870 and 1872	68.66
10651	G. M. Bell, Columbia, Iowa	do	1866 and 1868	38.16
10652	Joshua S. Murray, Columbus City, Iowa	do	1871 and 1872	45.54
10653	B. B. Phelps, Competine, Iowa	do	1866 and 1868	14.38
10654	J. H. Phelps, Competine, Iowa	do	1868	4.79
10655	A. B. Comstock, Comstock, Iowa	do	1866 and 1868	15.00
	do	do	1870 and 1872	8.48
	do	do	1872 and 1874	13.74
10656	Henry Geisen, Conover, Iowa	do	do	147.40
10657	Michael Shetler, Coon Rapids, Iowa	do	1871 and 1872	15.05
10658	Alanson D. Graves, Conectionville, Iowa	do	1870 and 1872	26.57
10659	Benj. D. Boswell, Corydon, Iowa	do	1867	91.57
10660	Richard Greenley, Cottage Hill, Iowa	do	1866 and 1868	24.64
	do	do	1868 and 1870	5.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10660	Richard Greenley, Cottage Hill, Iowa	Compensation of postmasters readjusted, etc.	1870 and 1872	$7.44
	do	do	1872	.65
10661	Griffin C. Abbey, Cottonville, Iowa	do	1866 and 1868	62.26
10662	Thomas Ormsby, Council Hill, Iowa	do	1873 and 1874	6.51
10663	George S. Peck, Cox Creek, Iowa	do	1866 and 1868	14.18
	do	do	1868 and 1870	19.08
	do	do	1872 and 1874	30.90
10664	Daniel T. Lee, Crawfordsville, Iowa	do	1866 and 1868	115.94
	do	do	1872 and 1874	80.58
10665	David Wilding, sr., Crescent City, Iowa	do	1868 and 1869	7.61
10666	John Currie, Crescent City, Iowa	do	1869	4.90
	do	do	1870 and 1872	22.80
	do	do	1872 and 1874	19.72
10667	Mark W. Purriance, Cromwell, Iowa	do	do	75.76
10668	Samuel Saltzgaver, Croton, Iowa	do	1866 and 1868	30.14
	do	do	1868 and 1870	17.74
10669	West Wilson, Crystal, Iowa	do	1872 and 1874	35.26
10670	Jno. H. Miller, Cuba, Iowa	do	1866 and 1867	3.50
10671	M. M. Lane, Dahlonega, Iowa	do	do	22.90
10672	Norris Pyle, Dahlonega, Iowa	do	1867 and 1868	13.74
10673	Halver Olson, Dalby, Iowa	do	1872 and 1874	21.60
10674	Parker Bucklem, Dallas, Iowa	do	1871 and 1872	14.72
	do	do	1872 and 1874	10.22
10675	Henry North, Dalmanutha, Iowa	do	1866 and 1868	28.46
	do	do	1868 and 1869	5.75
10676	Henry Myers, Danforth, Iowa	do	1866 and 1867	19.75
10677	W. D. Moore, Decatur, Iowa	do	1870 and 1872	69.80
10678	Byron R. Darrow, Deerfield, Iowa	do	1866 and 1868	11.78
10679	E. C. Pelton, Deerfield, Iowa	do	1872 and 1874	4.70
10680	J. S. Sargent, Deep River, Iowa	do	1866 and 1868	36.06
10681	Wilson M. Brown, Delanti, Iowa	do	do	13.09
	do	do	1868 and 1869	39.48
10682	A. L. Gleason, Delhi, Iowa	do	1870 and 1872	336.68
10683	J. E. Ingalls, Denmark, Iowa	do	do	96.24
10684	Ernest C. Achen, Denver, Iowa	do	do	11.00
10685	F. F. Stahl, Dodgeville, Iowa	do	1866 and 1867	28.28
	B. Miller, Dodgeville, Iowa	do	1867 and 1868	62.70
	do	do	1870 and 1872	20.64
	do	do	1872 and 1874	17.13
10686	C. Carpenter, Doran, Iowa	do	1868 and 1870	13.68
	do	do	1870 and 1872	9.56
	do	do	1872 and 1874	5.62
10687	Adam Irving, Douglass, Iowa	do	1866 and 1868	58.18
10688	L. Irving, Douglass, Iowa	do	1870 and 1872	38.19
10689	Barbara Dickey, Dover, Iowa	do	1866 and 1868	16.34
	do	do	1872 and 1873	9.02
10690	L. E. Hardy, Dow City, Iowa	do	1872 and 1874	18.68
10691	John D. Burks, Drakeville, Iowa	do	do	98.74
10692	Daniel Senger, Dry Creek, Iowa	do	1867 and 1868	4.48
	do	do	1870 and 1872	14.10
	do	do	1872	4.36
10693	Presley Samuel, Durango, Iowa	do	1866 and 1868	13.86
10694	Amon Fortner, Eagle, Iowa	do	1866 and 1867	14.51
10695	R. L. Jones, Earlville, Iowa	do	1872 and 1874	94.64
10696	A. G. Hubbard, Eatonville, Iowa	do	1866 and 1868	10.36
	do	do	1868 and 1869	6.43
10697	Aaron Melick, Eddyville, Iowa	do	1866 and 1868	415.50
10698	Benj. H. Ropes, Eldorado, Iowa	do	1870 and 1872	48.32
	do	do	1872 and 1874	18.80
10699	F. M. Garrison, Elgin, Iowa	do	1866	15.80
10700	George A. Stoehr, Elgin, Iowa	do	1866 and 1868	55.58
10701	Charles Schecker, Elkport, Iowa	do	1865 and 1867	48.64
10702	Wm. Tiede, Elkport, Iowa	do	1866	4.30
	do	do	1870	17.52
	do	do	1870 and 1872	36.48
10703	John Garber, Elkport, Iowa	do	1868	22.61
	do	do	1868 and 1869	52.57
10704	Linas P. Stillman, Elon, Iowa	do	1866 and 1868	29.12
	do	do	1872 and 1874	24.22
10705	C. W. Jarvis, Emmett, Iowa	do	1870	1.39
	do	do	1872 and 1874	4.62
10706	Robert H. Foster, Empire, Iowa	do	do	6.70
10707	Macklin Copeland, English Settlement, Iowa.	do	1866 and 1868	35.92
	do	do	1868 and 1869	4.54
10708	H. Young, Epworth, Iowa	do	1872 and 1874	.....
10709	Wm. Lee, Estella, Iowa	do	1868 and 1870	7.46
	do	do	1870 and 1871	3.63
10710	H. Jane Nowles, Eveland Grove, Iowa	do	1866	4.27

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10711	Edwin Baker, Eveland Grove, Iowa	Compensation of postmasters readjusted, etc.	1867 and 1868	$12.51
10712	James F. Crawford, Fairfield, Iowa	do	1866	45.77
	do	do	1866 and 1867	66.01
10713	John Sparks, Fairport, Iowa	do	1872 and 1874	13.54
	do	do	1868 and 1870	24.54
10714	William Reed, Farmersburg, Iowa	do	1870 and 1872	39.58
10715	Robert Black, Farmers Creek, Iowa	do	1866 and 1868	11.42
	do	do	1868 and 1870	3.40
	do	do	1870 and 1872	5.14
	do	do	1872 and 1873	4.66
10716	Wm. Eimers, Festina, Iowa	do	1870 and 1872	31.48
	do	do	1872 and 1874	46.88
10717	Hiram Beal, Flint, Iowa	do	1866 and 1867	17.19
10718	G. W. Henkle, Foote, Iowa	do	do	12.82
10719	Edwin M. Ritchey, Foote, Iowa	do	1870	1.48
	do	do	1870 and 1872	32.94
	do	do	1872 and 1873	5.09
10720	Wm. J. Watkins, Foote, Iowa	do	1867 and 1868	21.39
	do	do	1868 and 1870	10.40
10721	Walter Upton, Forest Home, Iowa	do	1866 and 1867	26.89
10722	W. S. Wolcott, Forest Home, Iowa	do	1871 and 1872	4.85
10723	John A. Jones, Foreston, Iowa	do	1868	13.62
10724	Philip C. Howe, Foreston, Iowa	do	1870	11.81
10725	J. R. Horton, Frankfort, Iowa	do	1866 and 1868	51.98
	do	do	1868 and 1870	5.40
	do	do	1870 and 1872	19.04
10726	Wm. H. Fry, Frank Pierce, Iowa	do	1866 and 1868	10.60
10727	D. E. Cutler, Frankville, Iowa	do	1866 and 1867	25.78
10728	Susannah Holloway, Frankville, Iowa	do	1867 and 1868	42.98
10729	L. C. Rima, Frederica, Iowa	do	1870 and 1872	12.62
10730	Peter Case, Fredericksburgh, Iowa	do	1866 and 1868	32.16
10731	Ira Barr, Fremont, Iowa	do	do	40.72
10732	Charles W. Wray, Fremont, Iowa	do	1873 and 1874	24.71
10733	Porter Bellows, French Creek, Iowa	do	1866 and 1868	15.94
	do	do	1868 and 1870	6.60
	do	do	1872 and 1874	4.90
10734	J. H. Rowen, Fryeburgh, Iowa	do	1868	1.84
	do	do	1868 and 1870	21.54
	do	do	1870 and 1871	7.95
10735	N. N. Hiams, Fryeburgh, Iowa	do	1871 and 1872	13.26
	do	do	1872 and 1874	18.16
10736	W. C. Morden, Fulton, Iowa	do	1866 and 1868	58.16
10737	J. L. Smith, Galesburgh, Iowa	do	do	16.96
	do	do	1868 and 1870	17.32
10738	C. B. Merz, Garibaldi, Iowa	do	1866 and 1868	23.64
10739	William Jess, Garry Owen, Iowa	do	1870 and 1872	20.44
10740	Wm. H. Thompson, Geneva, Iowa	do	1870 and 1871	1.62
10741	H. C. Clock, Geneva, Iowa	do	1871 and 1872	.86
10742	James E. Morse, Genoa Bluffs, Iowa	do	1866 and 1868	4.76
10743	A. N. Jay, Germanville, Iowa	do	do	27.78
	do	do	1870	6.23
10744	John Mannhardt, Germanville, Iowa	do	1870 and 1872	18.70
	do	do	1872 and 1874	8.44
10745	Benj. Winsett, Gilbertsville, Iowa	do	1868 and 1870	15.06
	do	do	1870 and 1872	35.14
10746	W. W. Moore, Gillett, Iowa	do	1872 and 1874	2.62
10747	Louis Misz, Girard, Iowa	do	1866 and 1868	29.84
	do	do	1868 and 1870	19.84
	do	do	1870 and 1872	37.52
10748	Ephraim Munsell, Givon, Iowa	do	1868 and 1870	14.70
	do	do	1870 and 1872	28.96
10749	Wm. Tilzey, Glasgow, Iowa	do	1866 and 1868	34.64
10750	Alonzo M. Pettit, Glen Roy, Iowa	do	1870 and 1872	141.74
10751	D. R. Browning, Glidden, Iowa	do	do	72.12
10752	Joseph Limes, Gosport, Iowa	do	1866 and 1867	113.79
10753	David Winder, Grand View, Iowa	do	1866 and 1868	118.94
	do	do	1870 and 1872	51.74
	do	do	1872 and 1874	38.52
10754	Thomas Donoho, Grant, Iowa	do	1866 and 1868	5.10
10755	J. H. Moses, Green Castle, Iowa	do	do	36.72
10756	P. H. Doud, Green Castle, Iowa	do	1870 and 1872	44.87
10757	Harrison Masters, Griffinsville, Iowa	do	do	17.52
	do	do	1872 and 1874	3.72
10758	Thomas S. Garlick, Grove Creek, Iowa	do	1866 and 1868	21.48
	do	do	1868 and 1870	4.60
10759	S. S. Severance, Grundy Centre, Iowa	do	1866 and 1868	49.78
	do	do	1872	17.92
10760	Theodore West, Hamilton, Iowa	do	1866 and 1868	64.90
	do	do	1870 and 1872	16.96

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10760	Theodore West, Hamilton, Iowa	Compensation of postmasters readjusted, etc.	1872 and 1874	$21.62
10761	John Bruner, Hamlin's Grove, Iowa	do	1868 and 1870	12.46
10762	D. M. Caldwell, Hammondsburgh, Iowa	do	1866 and 1867	5.11
10763	John Overbay, Hammondsburgh, Iowa	do	1871 and 1872	8.02
	do	do	1872 and 1874	10.48
10764	J. C. Beedy, Hardin, Iowa	do	1867 and 1868	62.11
	do	do	1868 and 1869	21.15
10765	Isaiah M. Leighner, Hartford, Iowa	do	1870 and 1872	24.08
	do	do	1872 and 1874	23.26
10766	Wm. H. Perkins, Hartland, Iowa	do	1866 and 1868	7.54
10767	W. H. Russell, Hartland, Iowa	do	1869 and 1870	6.11
	do	do	1870 and 1872	30.68
	do	do	1872 and 1873	6.49
10768	Geo. H. Rumbaugh, Hawleyville, Iowa	do	1866 and 1868	178.12
10769	J. P. Dickey, Hazel Green, Iowa	do	do	13.88
10770	Thomas C. Nelson, Hazelton, Iowa	do	1866 and 1867	7.30
10771	Thomas Morton, Hazleton, Iowa	do	1868	4.46
	do	do	1870	5.44
10772	J. B. Loutham, Helena, Iowa	do	1866 and 1868	32.50
10773	Fardyce Worth, Hesper, Iowa	do	1872 and 1874	113.71
10774	James Hibbs, Hibbsville, Iowa	do	1866 and 1868	5.36
	do	do	1868 and 1870	8.12
	do	do	1872 and 1874	7.42
10775	James Warren, Highpoint, Iowa	do	1866 and 1868	30.46
	do	do	1870	2.44
10776	Wash M. Galer, Hillsborough, Iowa	do	1867 and 1868	69.22
	do	do	1872 and 1874	27.54
10777	A. W. Teter, Hillsborough, Iowa	do	1866 and 1867	58.66
10778	George B. Wilson, Holadays, Iowa	do	1870 and 1872	17.76
10779	Isaac Mills, Hopewell, Iowa	do	1866 and 1868	37.30
	do	do	1868 and 1870	16.72
	do	do	1872 and 1874	20.94
10780	B. H. Baker, Holt, Iowa	do	1866 and 1868	8.34
10781	Alonzo M. Pettet, Howard Centre, Iowa	do	1866 and 1867	22.11
10782	A. M. Parkhurst, Howard Centre, Iowa	do	1868	3.68
	do	do	1868 and 1870	36.58
10783	Lucinda Delaplain, Huron, Iowa	do	1867 and 1868	9.71
	do	do	1870 and 1872	11.48
10784	R. W. Wass, Hudson, Iowa	do	1872 and 1874	25.86
10785	Edward Mericle, Iconium, Iowa	do	1866 and 1868	84.46
10786	Gorham A. Worth, Indianola, Iowa	do	do	205.31
10787	Samuel Harlan, Indianapolis, Iowa	do	do	51.64
10788	A. E. Young, Inland, Iowa	do	do	130.24
	do	do	1868 and 1870	32.96
	do	do	1870 and 1872	88.42
	do	do	1872 and 1874	37.08
10789	Richard F. Weller, Ioka, Iowa	do	1866	8.32
10790	J. T. Walker, Ioka, Iowa	do	1866 and 1868	58.25
10791	D. T. Durham, Iola, Iowa	do	do	4.16
10792	M. T. Colegrave, Ion, Iowa	do	do	9.26
10793	Silas C. Hulse, Ion, Iowa	do	1868 and 1870	10.16
	do	do	1870	3.44
	do	do	1872 and 1874	7.84
10794	Wm. White, Iowa Centre, Iowa	do	1866 and 1868	112.28
	do	do	1868	4.31
10795	Bernhard Eisentrout, Iron Mills, Iowa	do	1872 and 1874	19.56
10796	J. R. Armstrong, Irvington, Iowa	do	1870 and 1872	26.82
10797	John Zehming, Iuka, Iowa	do	1866	17.94
10798	Albert W. Thompson, Iuka, Iowa	do	1866 and 1868	125.61
10799	Allen Vaughn, Jacksonville, Iowa	do	1870	17.99
	do	do	1867	21.41
10800	Henry Morehouse, Janesville, Iowa	do	1866 and 1867	36.04
10801	J. M. Leslie, Janesville, Iowa	do	1867	24.03
10802	W. H. H. Gable, Janesville, Iowa	do	1867 and 1868	36.04
10803	Wm. H. Rich, Janesville, Iowa	do	1872 and 1874	90.74
10804	J. E. Fisher, Jasper City, Iowa	do	1869 and 1870	54.00
	do	do	1872 and 1874	90.48
10805	J. Z. Hunt, Jeddo, Iowa	do	1866 and 1868	10.40
10806	Elizabeth Rickard, Jefferson, Iowa	do	1866 and 1868	13.62
10807	Henry Wilson, Jerome, Iowa	do	1872 and 1874	6.52
10808	Julius G. Junge, Jollyville, Iowa	do	1866 and 1868	5.92
10809	S. I. Taylor, Kilbourne, Iowa	do	1868 and 1870	12.10
10810	J. W. McGlasson, Kirkville, Iowa	do	1866 and 1868	59.86
10811	Hugh Thompson, Knoxville, Iowa	do	do	174.15
10812	Richard B. Allender, Knoxville, Iowa	do	1866	20.93
10813	B. F. Stahl, Kossuth, Iowa	do	1870 and 1872	56.42
	do	do	1868	48.22
10814	Samuel Hustin, Koszta, Iowa	do	1866 and 1868	22.70
10815	Abraham C. Rarick, Lacelle, Iowa	do	1868	4.46

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10616	Isaac Myers, Lacona, Iowa	Compensation of postmasters readjusted, etc.	1867 and 1868	$35.10
10617	John Miller, Lacona, Iowa	do	1866 and 1867	18.68
10618	John Johnston, Lacona, Iowa	do	1866	4.94
10619	James Marble, Ladora, Iowa	do	1866 and 1867	5.18
10620	Richard Lanning, Lafayette, Iowa	do	1867 and 1868	14.76
10621	Charles Amy, Lake City, Iowa	do	1866 and 1868	35.26
10622	John Van Horn, Lamotte, Iowa	do	do	48.28
10623	T. R. Eckley, Lancaster, Iowa	do	1872 and 1874	30.36
10624	P. G. Bonewitz, Langworthy, Iowa	do	1866 and 1868	30.56
10625	Wm. McHenry, Last Chance, Iowa	do	1870 and 1872	14.08
	do	do	1872 and 1873	2.97
10626	Rufus Smith, Lebanon, Iowa	do	1867 and 1868	20.70
	do	do	1870 and 1872	57.54
	do	do	1872 and 1873	29.32
10627	Sewall R. Eaton, Lee, Iowa	do	1866 and 1868	27.68
10628	P. O. James, Leon, Iowa	do	1869 and 1870	69.36
10629	J. A. Snyder, Leon, Iowa	do	1868 and 1869	43.08
	do	do	1866 and 1868	132.60
10630	C. A. Harrington, Lester, Iowa	do	1872 and 1873	10.53
	do	do	1870 and 1872	24.46
10631	Jacob Proudfoot, Liberty, Iowa	do	do	25.60
	do	do	1872 and 1874	9.82
10632	Edward Fletcher, Libertyville, Iowa	do	1870 and 1872	19.76
	do	do	1866 and 1868	53.72
10633	J. A. Creek, Libertyville, Iowa	do	1866 and 1867	16.82
10634	A. J. Hensley, Lima, Iowa	do	1870 and 1872	5.02
	do	do	1866 and 1868	13.09
10635	H. C. Van Leuven, Lime Spring, Iowa	do	do	28.42
10636	Abraham Elliott, Lincoln, Iowa	do	do	8.42
10637	Wm. Fraizer, Lincoln, Iowa	do	1871 and 1872	13.28
10638	Daniel Buck, Lisbon, Iowa	do	1866	14.80
10639	James T. Burk, Lisbon, Iowa	do	1866 and 1868	64.15
10640	W. L. Davis, Lisbon, Iowa	do	1872 and 1874	198.26
10641	F. Peick, Littleport, Iowa	do	1866 and 1868	8.34
10642	Thos. J. Lanyon, Little Sioux, Iowa	do	1872 and 1874	71.32
10643	E. O. Smith, Livingston, Iowa	do	1866 and 1867	16.85
10644	Oliver C. Rinker, Livingston, Iowa	do	1872 and 1874	22.50
10645	Hans S. Johnson, Locust Lane, Iowa	do	1870 and 1872	22.96
	do	do	1872 and 1873	9.96
10646	J. B. Blake, Loveland, Iowa	do	1870 and 1872	28.68
10647	Michael Hittle, Lovilia, Iowa	do	1866 and 1868	26.46
10648	T. J. Price, Lowell, Iowa	do	1868 and 1870	17.24
10649	Frederick Zimmerman, Luni, Iowa	do	1866 and 1868	3.06
	do	do	1868 and 1870	18.80
	do	do	1872 and 1874	10.08
10650	Elisha Harris, Lybrand, Iowa	do	1866 and 1867	11.74
10651	L. S. Spencer, Lynn, Iowa	do	1870 and 1872	12.96
	do	do	1872	2.28
10652	Robert Grimes, Lytle City, Iowa	do	1870 and 1872	37.34
10653	A. L. McPherson, Mackville, Iowa	do	1866 and 1868	28.50
	do	do	1868 and 1869	8.53
10654	John W. Niles, Madison, Iowa	do	1866 and 1867	8.41
10655	Mrs. A. E. Chapman, Malcom, Iowa	do	1866	2.87
10656	W. J. Johnson, Malcom, Iowa	do	1867 and 1868	7.17
10657	James Glover, Manson, Iowa	do	1872 and 1874	92.18
10658	M. H. Bond, Manti, Iowa	do	1871 and 1872	110.20
	do	do	1872	13.94
10659	W. W. Reed, Manteno, Iowa	do	1866 and 1868	10.52
	do	do	1868 and 1870	43.82
	do	do	1870 and 1872	10.94
	do	do	1872 and 1874	20.32
10660	W. H. Wilsey, Mapleton, Iowa	do	1868 and 1870	21.36
	do	do	1870 and 1872	19.72
	do	do	1872 and 1874	8.04
10661	Alfred Fellows, Maquoketa, Iowa	do	1866 and 1868	14.04
10662	Henry Ristine, Marion, Iowa	do	1866	37.94
10663	S. W. Rathbun, Marion, Iowa	do	1870 and 1872	1,233.02
10664	James Q. Hampton, Martinsburgh, Iowa	do	1866	25.09
10665	J. B. Shepardson, Marble Rock, Iowa	do	1866 and 1867	22.55
10666	Maria A. Warren, Marshall, Iowa	do	do	55.08
10667	A. Deming, Massillon, Iowa	do	1870 and 1872	20.92
	do	do	1872 and 1874	44.68
10668	E. L. Clock, Maysville, Iowa	do	1866 and 1868	36.54
	do	do	1870 and 1871	42.19
10669	G. W. Wilton, Maysville, Iowa	do	1872	14.06
	do	do	1872 and 1874	44.32
10670	Lemuel Litton, Malleray, Iowa	do	1868 and 1870	13.74
	do	do	1870	4.79
10671	J. Craft, Memory, Iowa	do	1869 and 1870	15.70

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
	J. Craft, Memory, Iowa	Compensation of postmasters readjusted, etc.	1872 and 1874	$28.18
10872	Asa D. Littell, Mennon, Iowa	do	1866 and 1867	5.20
10873	Ezekiel Fay, Mentor, Iowa	do	1872 and 1874	2.74
10874	L. P. Stutson, Middlefield, Iowa	do	1870 and 1872	7.40
	do	do	1872 and 1873	1.14
10875	Andrew Thompson, Mid Prairie, Iowa	do	1870 and 1872	5.42
10876	N. W. Spears, Mill, Iowa	do	1866 and 1868	20.36
	do	do	1868 and 1870	6.74
	do	do	1870 and 1872	7.86
10877	Wells Peppers, Milledgeville, Iowa	do	1868	.32
10878	J. H. McCauly, Milledgeville, Iowa	do	1868 and 1869	4.00
10879	E. Chadwick, Milledgeville, Iowa	do	1871 and 1872	19.47
10880	Wm. English, Mill Grove, Iowa	do	1867 and 1868	4.63
	do	do	1870 and 1872	14.36
10881	David Wickard, Millersburgh, Iowa	do	1866 and 1867	101.15
10882	Wm. Woodworth, Millville, Iowa	do	1867 and 1868	89.96
	do	do	1868 and 1870	19.33
10883	Wm. W. Gilmore, Millville, Iowa	do	1866 and 1867	23.97
10884	Martin Kays, Milton, Iowa	do	1870 and 1872	89.77
	do	do	1869 and 1870	9.24
10885	Wm. M. Clemons, Minerva, Iowa	do	1866 and 1868	15.16
	do	do	1868 and 1869	8.01
10886	David Worcester, Minerva, Iowa	do	1870 and 1871	3.26
	do	do	1869 and 1870	4.80
10887	C. J. A. Ericson, Mineral Ridge, Iowa	do	1870 and 1872	37.39
10888	Abner Hunt, Mill Rock, Iowa	do	1868 and 1870	42.68
	do	do	1867 and 1868	33.00
10889	A. G. Burdick, Mill Rock, Iowa	do	1867	22.01
10890	Milan M. Standish, Monmouth, Iowa	do	1871 and 1872	15.45
10891	William Porter, Monterey, Iowa	do	1867 and 1868	72.64
10892	John Fifer, Montrose, Iowa	do	1867	16.58
10893	Oliver Reeves, Montrose, Iowa	do	1866	15.32
10894	Ephraim Cummings, Moravia, Iowa	do	1866 and 1868	106.00
10895	M. Baker, Moscow, Iowa	do	1870	12.35
10896	Nicholas Spence, Mount Algor, Iowa	do	1866 and 1867	7.74
10897	Thomas Lewis, Mount Auburn, Iowa	do	1872 and 1874	7.04
10898	Geo. B. Roby, Mount Ayr, Iowa	do	1872 and 1873	69.90
10899	Elliott D. Stone, Mount Hope, Iowa	do	1866 and 1868	8.74
10900	Hafford E. Bradford, Mount Sterling, Iowa.	do	do	21.94
10901	Edmund Homan, Mount Washington, Iowa.	do	1866 and 1867	7.97
10902	Andrew Cochran, Murray, Iowa	do	1872 and 1874	86.90
10903	M. A. Knight, National, Iowa	do	1866 and 1867	53.04
10904	Riley Howard, Newbern, Iowa	do	1866 and 1868	40.37
10905	Otis Briggs, Nevada, Iowa	do	1866	17.76
10906	Briant O. Stephenson, Nevinville, Iowa	do	do	3.26
10907	J. L. Ellis, Nevinville, Iowa	do	1866 and 1868	9.79
10908	D. E. Hemphill, Nevinville, Iowa	do	1872 and 1873	3.50
10909	James Jordan, New Boston, Iowa	do	1866 and 1868	29.41
10910	H. C. Bechtold, New Buda, Iowa	do	1870 and 1871	25.24
10911	E. Bourguin, New Hartford, Iowa	do	1872 and 1874	66.94
10912	Robert Stewart, North Liberty, Iowa	do	1870 and 1872	29.63
10913	Martha Getsen, New Liberty, Iowa	do	1871 and 1872	25.60
10914	A. Chandler, New London, Iowa	do	1866 and 1868	120.22
10915	Joseph B. Mitchell, New Oregon, Iowa	do	1869 and 1870	85.86
10916	Manly M. Moon, New Oregon, Iowa	do	1868	17.68
10917	J. L. McCollum, New Oregon, Iowa	do	1868 and 1869	35.36
10918	Joseph B. Mitchell, New Oregon, Iowa	do	1870 and 1872	104.24
10919	Joseph Schemmel, New Vienna, Iowa	do	1866 and 1868	53.52
	do	do	1868 and 1869	15.44
10920	George Meinhart, New Vienna, Iowa	do	1869 and 1870	22.28
10921	G. W. Hylton, New Virginia, Iowa	do	1866 and 1868	10.56
	do	do	1868	.69
10922	J. B. Hatton, New York, Iowa	do	1866 and 1868	42.90
10923	G. A. Bennett, New York, Iowa	do	1873 and 1874	5.78
10924	Alonzo F. Sweet, Nora Springs, Iowa	do	1866 and 1868	27.09
10925	W. H. Ashby, Norwood, Iowa	do	1870 and 1872	26.06
10926	Isaac Sager, Northfield, Iowa	do	1866 and 1868	21.86
	do	do	1870 and 1872	25.92
	do	do	1872 and 1873	13.62
10927	Isaac W. Scott, Northfield, Iowa	do	1873 and 1874	10.18
10928	George G. Sidles, Numa, Iowa	do	1866	4.93
10929	E. E. Harvey, Numa, Iowa	do	1866 and 1868	34.51
10930	G. R. Huston, Numa, Iowa	do	1870 and 1872	21.52
10931	A. F. Green, Nugent Grove, Iowa	do	1872 and 1874	17.36
10932	Wm. C. Norton, Oakfield, Iowa	do	1866 and 1868	16.18
10933	Levi Bigelow, Oakland Valley, Iowa	do	1870 and 1872	41.74
	do	do	1872 and 1874	16.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10934	Peter Rattray, Ogden, Iowa	Compensation of postmasters readjusted, etc.	1872	$34.98
10935	W. Y. Flemming, Orleans, Iowa	do	1870 and 1872	47.34
	do	do	1872 and 1874	7.84
10936	J. L. Chase, Osage, Iowa	do	1870 and 1871	50.61
10937	Wm. Polly, Osceola, Iowa	do	1866 and 1868	201.08
10938	W. G. Agnew, Osceola, Iowa	do	1871 and 1872	232.05
10939	Timothy Lamb, Otter Creek, Iowa	do	1867 and 1868	15.62
10940	S. M. Wilson, Otranto, Iowa	do	1872 and 1873	28.90
10941	S. A. Bickford, Ozark, Iowa	do	1868 and 1870	10.54
	do	do	1870 and 1872	12.28
	do	do	1872 and 1874	14.80
10942	J. C. Long, Paris, Iowa	do	1866 and 1868	6.44
	do	do	1868 and 1869	1.63
10943	James McWade, Pacific City, Iowa	do	1869 and 1870	16.66
	do	do	1872 and 1873	27.70
10944	Daniel Brown, Panora, Iowa	do	1870 and 1872	279.12
10945	G. M. Bartholomew, Palmyra, Iowa	do	1866 and 1868	75.70
	do	do	1872 and 1874	21.06
10946	Stephen Peebles, Pacific City, Iowa	do	1873 and 1874	14.62
10947	John Hollenbeck, Palo, Iowa	do	1870 and 1872	46.46
	do	do	1866 and 1868	21.14
10948	John Keith, Pedee, Iowa	do	1866	2.93
10949	J. H. Robinson, Pedee, Iowa	do	1866 and 1868	20.55
	do	do	1870 and 1872	14.24
	do	do	1872 and 1874	9.44
10950	Henry D. Rice, Peterson, Iowa	do	1868	1.59
10951	A. W. Beadell, Peosta, Iowa	do	1870	4.21
	do	do	1866 and 1868	41.68
10952	Wm. L. Beall, Pierce Point, Iowa	do	1866 and 1867	19.44
10953	John H. Floyd, Pin Oak, Iowa	do	1866 and 1868	9.80
10954	Wm. Peter Lasch, Pin Oak, Iowa	do	1870	5.48
10955	John H. Floyd, Pin Oak, Iowa	do	1868 and 1869	8.22
10956	William Peter Lasch, Pin Oak, Iowa	do	1870 and 1872	45.60
	do	do	1872 and 1874	36.34
10957	T. O. Moon, Pilot Grove, Iowa	do	1866 and 1868	25.38
10958	Orange S. Wight, Pilot Rock, Iowa	do	1870 and 1871	3.07
10959	B. S. Wilson, Pittsburgh, Iowa	do	1866 and 1868	47.88
	do	do	1868	7.78
10960	J. H. Duffield, Pittsburgh, Iowa	do	1868 and 1870	36.15
10961	Thomas King, Platteville, Iowa	do	1866 and 1867	22.78
10962	Wm. H. Miner, Pleasantville, Iowa	do	1872 and 1874	67.07
10963	James Stucker, Pleasant Grove, Iowa	do	1866	14.69
10964	Geo. W. Zion, Pleasant Grove, Iowa	do	1867 and 1868	44.07
10965	T. M. McConnell, Pleasant Plain, Iowa	do	1866 and 1868	48.90
	do	do	1870 and 1872	32.42
10966	Isaac L. Fowler, Pleasant Prairie, Iowa	do	do	6.13
10967	J. S. Bear, Plymouth Rock, Iowa	do	1868	10.47
10968	G. W. Thomas, Point Isabel, Iowa	do	1866 and 1867	9.51
10969	W. B. Hopkins, Point Palestine, Iowa	do	1866 and 1868	13.46
10970	L. O. Lowden, Point Pleasant, Iowa	do	1872	6.38
10971	Andrew J. Carr, Point Pleasant, Iowa	do	1867 and 1868	2.81
10972	W. B. Hopkins, Point Palestine, Iowa	do	1868 and 1869	4.90
10973	C. W. Cilley, Port Louisa, Iowa	do	1867 and 1868	6.59
	do	do	1868 and 1870	64.00
10974	John Finley, Port Richmond, Iowa	do	1866 and 1868	24.20
10975	Nicholas Kiefer, Pomeroy, Iowa	do	1872 and 1873	32.99
10976	Theodore Dunn, Pomeroy, Iowa	do	1873 and 1874	43.65
10977	D. G. Winchell, Prairie City, Iowa	do	1872 and 1873	102.83
10978	Greenville P. Dodd, Prairie Grove, Iowa	do	1866 and 1868	14.92
	do	do	1868	.61
10979	J. B. Parcell, Princeton, Iowa	do	1866 and 1868	50.07
	do	do	1872 and 1874	79.04
10980	Lewis Rye, Primrose, Iowa	do	do	45.40
10981	E. A. Bauman, Promise City, Iowa	do	1870 and 1872	12.06
10982	J. H. Plank, Pulaski, Iowa	do	1866 and 1867	4.23
10983	David Tucker, Pulaski, Iowa	do	1867 and 1868	5.65
10984	Adam V. Smith, Pulaski, Iowa	do	1869	31.61
10985	W. H. Shelton, Pulaski, Iowa	do	1870	15.86
	do	do	1870 and 1872	74.05
	do	do	1872 and 1874	36.70
10986	Lewis Small, Quasqueton, Iowa	do	1867 and 1868	58.45
10987	W. Butterfield, Quasqueton, Iowa	do	1872 and 1874	90.40
10988	A. K. Crawford, Quincy, Iowa	do	1867 and 1868	45.68
	do	do	1870 and 1872	95.52
10989	J. C. Hagensick, Read, Iowa	do	1866 and 1868	30.74
10990	M. C. Thomas, Redfield, Iowa	do	1866	43.32
10991	S. F. Stiles, Redfield, Iowa	do	1867	21.66
10992	David Chance, Redfield, Iowa	do	1870 and 1872	95.98
	do	do	1872	31.96

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10993	James W. Harp, Red Rock, Iowa	Compensation of postmasters readjusted, etc.	1866 and 1868	$116.24
	do	do	1870 and 1871	31.26
10994	N. H. Vanarsdale, Reeder's Mills, Iowa	do	1867 and 1868	3.94
	do	do	1868 and 1870	11.36
	do	do	1872	3.53
10995	James Hanes, Reeder's Mills, Iowa	do	1872 and 1874	10.17
10996	Artemas T. Tyrell, Riceville, Iowa	do	1870 and 1872	59.74
	do	do	1872 and 1874	74.82
10997	John Fargroves, Richland, Iowa	do	1866 and 1868	129.83
10998	Cyrus Bush, Richmond, Iowa	do	1866 and 1867	41.02
10999	J. C. Lovejoy, Rippey, Iowa	do	1868 and 1870	12.68
11000	Samuel Fleming, Rising Sun, Iowa	do	1866 and 1867	23.11
11001	S. G. Livermore, Robin, Iowa	do	1870 and 1872	8.56
11002	T. H. Lovejoy, Rock Creek, Iowa	do	1872 and 1874	20.06
11003	Gustav Horn, Rockdale, Iowa	do	1870 and 1872	130.22
	do	do	1872 and 1874	39.52
11004	Henry D. Cadwell, Rock Falls, Iowa	do	1872	3.07
	do	do	1872 and 1874	8.86
11005	Noah Walters, Rochester, Iowa	do	1868 and 1870	19.12
11006	James Gallagher, Rome, Iowa	do	1868 and 1869	56.13
11007	James McElhany, Rome, Iowa	do	1869 and 1870	27.17
	do	do	1872 and 1873	12.96
11008	Solomon Hodson, Rose Mount, Iowa	do	1870 and 1872	7.90
11009	B. F. Jacobs, Round Grove, Iowa	do	1872 and 1874	11.16
11010	William B. Beebe, Sabula, Iowa	do	1868 and 1869	66.28
11011	Nicholas Koob, Saint Donatus, Iowa	do	1866	8.66
11012	P. Gehlen, Saint Donatus, Iowa	do	1867 and 1868	25.99
11013	N. Krier, Saint Donatus, Iowa	do	1872 and 1874	22.38
11014	Elijah K. Robinson, Saint John's, Iowa	do	1868 and 1870	88.40
	do	do	1870 and 1872	8.04
	do	do	1872 and 1873	4.39
11015	John Schroeder, Saint Paul, Iowa	do	1870 and 1872	70.12
	do	do	1872 and 1874	53.36
11016	George Schuchmann, Saint Sebald, Iowa	do	1870 and 1872	38.90
	do	do	1872 and 1874	49.84
11017	Elijah Edwards, Salina, Iowa	do	1866 and 1868	28.66
	do	do	1872 and 1874	42.36
11018	Orson Henry, Sand Spring, Iowa	do	1866 and 1868	45.70
11019	Elizabeth Hunt, Sandusky, Iowa	do	1866 and 1867	13.80
11020	Thomas Jarvis, Sandusky, Iowa	do	1867 and 1868	13.80
11021	James Stafford, Sandyville, Iowa	do	1866 and 1868	111.00
	do	do	1872 and 1874	22.62
11022	W. M. Lungford, Savannah, Iowa	do	1866	6.20
11023	Lorenzo D. Brunk, Savannah, Iowa	do	1866 and 1868	41.52
	do	do	1870 and 1872	16.32
	do	do	1872 and 1873	8.97
11024	Timothy J. Halstead, Savannah, Iowa	do	1873 and 1874	5.94
11025	Sydney West, Saylorville, Iowa	do	1872 and 1874	16.90
11026	John W. Barnard, Sciola, Iowa	do	1870 and 1872	34.79
11027	Paul Welch, Sciola, Iowa	do	1866 and 1868	57.87
11028	Henry Powers, Scott Centre, Iowa	do	1868 and 1870	1.58
11029	Robert Espy, Scott Grove, Iowa	do	1866 and 1868	19.28
11030	Benj. J. Nichols, Seaton, Iowa	do	1870 and 1872	3.24
11031	J. K. Andrews, Sedgwick, Iowa	do	do	12.92
	do	do	1872 and 1874	12.98
11032	Jas. Leverich, Shell Rock, Iowa	do	1867 and 1868	44.11
11033	Peter Fries, Sherrill Mount, Iowa	do	1870 and 1872	22.74
	do	do	1872 and 1874	53.34
11034	Ezra Stanchfield, Shueyville, Iowa	do	1870 and 1872	23.84
11035	J. C. C. Hoskins, Sioux City, Iowa	do	1866 and 1868	337.14
11036	James Walker, Simpson, Iowa	do	1866 and 1867	10.20
	do	do	1869 and 1870	2.78
	do	do	1870 and 1872	122.04
	do	do	1872	46.16
11037	S. A. James, Sigourney, Iowa	do	1866	9.90
11038	S. C. McLean, Sigourney, Iowa	do	1866 and 1868	156.08
11039	Ed. Hackinson, Sloan, Iowa	do	1872 and 1874	31.54
11040	Wm. McDonald, Smithland, Iowa	do	1868 and 1870	29.40
	do	do	1870 and 1872	78.58
	do	do	1872 and 1873	33.66
11041	O. D. Smalley, Snyder, Iowa	do	1870 and 1872	5.54
	do	do	1866 and 1868	8.72
11042	J. F. White, South English, Iowa	do	do	94.40
11043	Alpheus Alexander, Spragueville, Iowa	do	do	50.50
	do	do	1872 and 1874	19.30
11044	J. J. Hang, Spillville, Iowa	do	1871 and 1872	29.31
	do	do	1872 and 1874	42.68
11045	G. Blackert, Spirit Lake, Iowa	do	1870 and 1873	23.53
11046	Geo. Gubbage, Spring Brook, Iowa	do	1866 and 1868	16.88

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11047	John C. Chambers, Springdale, Iowa	Compensation of postmasters readjusted, etc.	1867 and 1868	$30.24
	do	do	1870 and 1871	32.72
11048	Thomas James, Springdale, Iowa	do	1872	10.85
	do	do	do	16.23
11049	Samuel K. Bye, Springdale, Iowa	do	1873 and 1874	58.58
11050	Thomas Urie, Springfield, Iowa	do	1866 and 1867	11.52
11051	John Cockman, Spring Lake, Iowa	do	1870 and 1872	4.86
	do	do	1872	.41
11052	James M. Dale, Spring Valley, Iowa	do	1866 and 1867	7.82
11053	Isaac M. Gidley, Spring Water, Iowa	do	1866 and 1868	8.46
	do	do	1870 and 1871	4.36
11054	Hiram Clements, Sterling, Iowa	do	1866	13.85
11055	John Hughes, Stelapolis, Iowa	do	1866 and 1868	20.76
11056	T. F. Collins, Stiles, Iowa	do	do	28.72
	do	do	1872 and 1874	37.84
11057	Jacob Renwald, Summitville, Iowa	do	1866 and 1868	51.92
	do	do	1870 and 1872	15.36
	do	do	1872 and 1874	14.78
11058	Michael Gilman, Summerset, Iowa	do	1866 and 1867	9.01
11059	Jeremiah Murphy, Sunny Side, Iowa	do	1866 and 1868	17.42
11060	Edwin C. Rankin, Tallahome, Iowa	do	1866 and 1868	40.96
11061	Nathan Johnson, Talleyrand, Iowa	do	1866	13.93
11062	A. T. Thompson, Tama City, Iowa	do	1866 and 1868	125.61
11063	R. C. Miller, Tarkio, Iowa	do	do	23.20
11064	Stephen Wescott, Taylorsville, Iowa	do	do	42.22
	do	do	1872 and 1874	25.30
	do	do	1870 and 1872	22.00
11065	Henry Torrey, Timber Creek, Iowa	do	1872 and 1874	13.18
11066	Daniel O'Connell, Tivoli, Iowa	do	1870 and 1872	28.18
	do	do	1872 and 1874	18.86
11067	G. H. Mosier, Toolsborough, Iowa	do	do	15.70
	do	do	1870 and 1872	11.20
	do	do	1866 and 1868	58.02
11068	J. Morrison, Trenton, Iowa	do	1872 and 1874	21.30
	do	do	1870 and 1872	30.54
	do	do	1867 and 1868	26.95
11069	J. A. Hale, Tripoli, Iowa	do	do	9.85
	do	do	1870 and 1872	13.10
11070	D. S. Fay, Troy Mills, Iowa	do	1871 and 1872	18.47
11071	John Ball, Ulster, Iowa	do	1866 and 1868	16.98
	do	do	1868 and 1870	5.84
11072	H. S. Smith, Unionburgh, Iowa	do	1870 and 1872	8.70
11073	Andrew Hess, Union Hill, Iowa	do	1866 and 1868	14.18
	do	do	1868 and 1870	2.42
11074	John Mallory, Uniontown, Iowa	do	1866 and 1868	18.70
	do	do	1870 and 1872	2.91
	do	do	1868 and 1870	7.44
11075	A. J. Morrison, Unionville, Iowa	do	1866 and 1868	90.28
11076	J. B. Kern, Upper Grove, Iowa	do	1872 and 1874	12.54
	do	do	1871 and 1872	8.41
11077	James McCance, Upton, Iowa	do	1866 and 1867	6.65
	do	do	1870 and 1872	44.52
	do	do	1872 and 1874	36.18
11078	E. Culver, Urbana, Iowa	do	1868	4.07
11079	Jacob Spraka, Utica, Iowa	do	1870 and 1872	9.80
11080	Eli A. Guess, Utica, Iowa	do	1867 and 1868	28.57
11081	Curtis Wells, Valley, Iowa	do	1866 and 1868	24.58
11082	Zachariah De Groot, Van Buren, Iowa	do	do	54.70
11083	Ira E. Draper, Vandalia, Iowa	do	1866	30.75
11084	William S. Ingle, Vandalia, Iowa	do	1866 and 1867	68.94
11085	Mary A. Miller, Venus, Iowa	do	1871 and 1872	4.45
11086	William Brownell, Village Creek, Iowa	do	1872 and 1874	47.72
	do	do	1870 and 1872	41.32
	do	do	1866 and 1868	80.20
11087	Henry White, Volga City, Iowa	do	do	33.86
	do	do	1870 and 1872	56.58
	do	do	1872 and 1874	45.56
11088	Horace Burnham, Volney, Iowa	do	1871 and 1872	14.28
11089	T. Miller, Venus, Iowa	do	1870 and 1871	4.45
11090	Alexander N. Coffin, Wacousta, Iowa	do	1866 and 1868	13.08
	do	do	1868 and 1870	7.94
	do	do	1872 and 1874	4.60
11091	Sylvester Smith, Wayne, Iowa	do	1866 and 1868	29.42
	do	do	1870 and 1872	9.24
	do	do	1872 and 1874	8.38
11092	P. B. Eno, Wagner, Iowa	do	1868 and 1870	20.76
11093	Simon Early, Wagner, Iowa	do	1870 and 1872	28.30
	do	do	1872 and 1874	6.68
11094	M. C. Jordan, Wapsie, Iowa	do	1866 and 1868	12.94

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11094	M. C. Jordan, Wapsie, Iowa	Compensation of postmasters readjusted, etc.	1868 and 1870	$4.94
11095	James B. Ward, Ward's Corners, Iowa	do	1866 and 1868	3.96
	do	do	1870 and 1872	12.48
	do	do	1872 and 1874	9.54
11096	J. D. Anderson, Warren, Iowa	do	1866 and 1867	12.40
11097	Greenberry Wilson, Warsaw, Iowa	do	1871 and 1872	9.66
11098	A. R. Wickersham, Washington, Iowa	do	1866	100.49
11099	John Wiseman, Washington, Iowa	do	1866 and 1867	120.45
11100	N. G. Field, Wassonville, Iowa	do	do	46.38
11101	Enoch G. Whetstine, Wassonville, Iowa	do	1867 and 1868	77.31
	do	do	1868 and 1870	33.00
	do	do	1870 and 1871	5.49
11102	Elery N. Foster, Wassonville, Iowa	do	1871 and 1872	9.15
11103	C. A. Huston, Waubeck, Iowa	do	1870 and 1872	33.84
	do	do	1872 and 1874	51.82
11104	J. P. Webster, Waucoma, Iowa	do	1866 and 1868	34.02
11105	Wm. R. Pattee, Waukon, Iowa	do	1870 and 1871	41.72
11106	Emerline E. Stevens, Waukon, Iowa	do	1871 and 1872	106.28
11107	Wm. H. Shuey, Western College, Iowa	do	1870 and 1872	116.62
11108	Levi Marsh, West Irving, Iowa	do	1866 and 1868	105.81
	do	do	1868 and 1870	121.56
	do	do	1870 and 1871	15.56
11109	Braxton Benn, West Irving, Iowa	do	1871 and 1872	25.94
	do	do	1872 and 1874	24.85
11110	Richard Jordan, West Prairie, Iowa	do	1872 and 1873	4.52
	do	do	1870 and 1872	17.84
11111	H. W. Welsing, West Point, Iowa	do	1866 and 1868	85.45
11112	J. A. Maddy, Weller, Iowa	do	do	19.96
11113	M. Dunebar, What Cheer, Iowa	do	1870 and 1872	21.42
11114	Wm. H. Baylis, Wheatland, Iowa	do	1871 and 1872	60.79
11115	John R. Traver, Wheeler's Grove, Iowa	do	1870 and 1872	24.72
	do	do	1872 and 1874	16.58
11116	John T. Polsom, Wheeling, Iowa	do	1870 and 1872	52.54
11117	David Hockert, Wheeling, Iowa	do	1868	21.27
11118	C. C. Wilkie, Wheeling, Iowa	do	1866 and 1867	63.81
11119	John M. Ebersole, White Cloud, Iowa	do	1870 and 1872	37.45
11120	John Galbreth, White Cloud, Iowa	do	1866 and 1867	23.08
11121	David A. Hervey, White Pigeon, Iowa	do	1866 and 1868	7.75
11122	W. W. Olmsted, Willoughby, Iowa	do	1868 and 1869	7.74
	do	do	1867 and 1868	8.88
11123	Era S. Rand, Winchester, Iowa	do	1866 and 1867	33.55
11124	A. A. Fry, Winchester, Iowa	do	1872 and 1874	17.50
	do	do	1868 and 1870	17.24
	do	do	1868	18.93
11125	John H. Goodspeed, Winfield, Iowa	do	1872 and 1874	61.80
11126	John J. Davis, Winterset, Iowa	do	1866 and 1867	204.23
11127	F. M. Cassiday, Winterset, Iowa	do	1867 and 1868	140.02
11128	J. W. Dalley, Woodbine, Iowa	do	1867	5.34
11129	Alexander Douglas, Woodbridge, Iowa	do	1866 and 1867	3.66
11130	Caroline Bartholomew, Woodbridge, Iowa.	do	1867 and 1868	6.06
11131	Ashabel Bronson, Wyoming, Iowa	do	1872	31.84
11132	W. H. Holmes, Wyoming, Iowa	do	1872 and 1874	222.90
11133	Ashabel Bronson, Wyoming, Iowa	do	1871 and 1872	53.08
11134	Harrison Noble, Yankee Settlement, Iowa.	do	1870 and 1872	14.24
11135	Ellen Chapin, Yatton, Iowa	do	1870 and 1871	16.83
	do	do	1869 and 1870	5.03
11136	Mrs. C. H. Green, Yatton, Iowa	do	1866 and 1867	14.06
11137	Selden F. Bush, York, Iowa	do	do	32.94
11138	Wm. Welch, York Prairie, Iowa	do	1872	1.87
	do	do	1871 and 1872	4.68
11139	Jno. D. Foster, Zwingle, Iowa	do	1870 and 1872	31.35
	do	do	1868 and 1870	10.50
11140	Wm. Swift, America City, Kans	do	1872	11.06
	do	do	1872 and 1874	64.42
11141	John Harbottle, Abilene, Kans	do	1872 and 1874	206.35
11142	A. M. Young, Aubrey, Kans	do	1872 and 1874	31.94
11143	John Messenger, Barnesville, Kans	do	1870 and 1872	147.68
	do	do	1872 and 1874	17.12
11144	Sarah A. Fleming, Belmont, Kans	do	1868 and 1870	72.46
11145	Thomas Kelsey, Berea, Kans	do	1866 and 1868	20.30
11146	Laura M. Swan, Big Springs, Kans	do	1867 and 1868	13.04
11147	L. W. Morey, Burlington, Kans	do	1866 and 1868	47.00
11148	Noah Hanson, Carson, Kans	do	1866 and 1868	19.84
	do	do	1870 and 1872	06.08
	do	do	1872 and 1874	52.88
11149	Martin Vought, Chelsea, Kans	do	1868	2.55

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11150	M. Henderson McCormick, Circleville, Kans.	Compensation of postmasters readjusted, etc.	1871 and 1872	$19.06
	.....do	.....do	1872 and 1873	35.04
11151	W. P. Proctor, Claytonville, Kans	.....do	1866 and 1867	4.79
11152	W. Funnell, Clifton, Kans	.....do	1872 and 1874	49.28
11153	Lorenzo D. Payne, Clinton, Kans	.....do	1866 and 1868	62.32
11154	A. P. Gaudy, Cottonwood Falls, Kans	.....do	1866 and 1868	29.31
11155	James Swan, Cuba, Kans	.....do	1873 and 1874	12.76
11156	Mathew Boyle, Delaware City, Kans	.....do	1868 and 1870	12.86
	.....do	.....do	1870 and 1872	18.06
11157	Elijah Phillips, Diamond Springs, Kans	.....do	1872 and 1874	103.76
11158	E. K. Adamson, Easton, Kans	.....do	1866 and 1868	25.50
11159	Irving Parmeter, Elizabethtown, Kans	.....do	1872	5.81
	.....do	.....do	1872 and 1873	7.24
11160	Z. Jackson, Ellsworth, Kans	.....do	1873 and 1874	188.84
11161	F. L. Pilla, Eudora, Kans	.....do	1866 and 1868	87.60
11162	Isaac Phenis, Eureka, Kans	.....do	1869	5.20
11163	Helen E. Holman, Eureka, Kans	.....do	1872 and 1873	104.88
11164	Wm. M. Walter, Far West, Kans	.....do	1866 and 1868	6.36
11165	Vincent B. Osborn, Fort Harker, Kans	.....do	1870 and 1871	233.15
11166	Henry Booth, Fort Larned, Kans	.....do	1872 and 1873	103.66
11167	J. T. Price, Fort Riley, Kans	.....do	1866 and 1868	381.53
11168	James Streeter, Fort Riley, Kans	.....do	1868	54.50
	.....do	.....do	1868 and 1869	193.89
11169	T. G. Clark, Gardner, Kans	.....do	1866 and 1868	33.04
	.....do	.....do	1870 and 1872	66.58
	.....do	.....do	1872 and 1874	61.74
11170	James R. Register, Gatesville, Kans	.....do	1870 and 1872	18.02
11171	D. W. Smith, Greeley, Kans	.....do	1866 and 1868	32.36
	.....do	.....do	1868 and 1869	9.18
11172	Wm. Nitengale, Greenwood, Kans	.....do	1866 and 1867	5.75
11173	Harrison Reed, Greenwood, Kans	.....do	1867 and 1868	3.45
	.....do	.....do	1868 and 1870	7.56
11174	D. W. Burrows, Greenwood, Kans	.....do	1871 and 1872	26.88
	.....do	.....do	1872	.44
11175	X. Guittard, Guittard Station, Kans	.....do	1870 and 1872	13.10
11176	Joseph McCune, Hamlin, Kans	.....do	1866 and 1868	46.54
11177	Edwin B. Rall, Hiattville, Kans	.....do	1872 and 1873	18.17
11178	B. F. White, Huron, Kans	.....do	1866 and 1868	23.79
11179	F. M. McCaslin, Jacksonville, Kans	.....do	1872 and 1874	36.10
11180	John James, James Crossing, Kans	.....do	1868 and 1869	1.88
11181	Thomas A. Hill, Jamesville, Kans	.....do	1866 and 1868	32.16
	.....do	.....do	1868 and 1870	6.40
	.....do	.....do	1870	.90
11182	J. W. H. Golden, Labette, Kans	.....do	1872 and 1874	73.20
11183	R. D. Britt, Lane, Kans	.....do	1866 and 1867	6.90
11184	John Stulfouth, Lane, Kans	.....do	1867 and 1868	11.50
11185	Elijah Robinson, Le Roy, Kans	.....do	1866 and 1868	38.25
11186	Mrs. H. A. Smith, Louisville, Kans	.....do	1868 and 1870	35.01
11187	Erastus Barnes, Louisville, Kans	.....do	1873 and 1874	38.68
11188	J. R. Rounsavell, Lowell, Kans	.....do	1871 and 1872	42.43
11189	Edward Jones, Marmaton, Kans	.....do	1870 and 1872	107.48
11190	Samuel Beverlin, Middle Creek, Kans	.....do	1866 and 1868	6.64
	.....do	.....do	1868 and 1870	3.64
11191	S. S. Tipton, Mineral Point, Kans	.....do	1866 and 1867	3.87
11192	R. P. Miller, Mission Creek, Kans	.....do	1868 and 1870	6.86
	.....do	.....do	1870 and 1872	9.56
11193	Wm. Curtis, Mount Florence, Kans	.....do	1866 and 1868	21.06
11194	George G. Crawford, Mount Florence, Kans.	.....do	1871 and 1872	10.49
11195	Xavier Klein, Mount Pleasant, Kans	.....do	1872 and 1874	17.66
11196	P. H. Moser, Newbury, Kans	.....do	.....do	24.68
11197	W. H. Auld, Nettingham, Kans	.....do	1866 and 1868	10.33
11198	S. R. Doolittle, Oakwood, Kans	.....do	1868 and 1869	11.05
11199	Samuel E. McKee, Olathe, Kans	.....do	1866	28.28
11200	Alfred Newman, Ontario, Kans	.....do	1866 and 1868	5.00
	.....do	.....do	1870 and 1872	10.44
	.....do	.....do	1872 and 1874	3.22
	.....do	.....do	1868 and 1870	3.48
11201	D. M. Smith, Oskaloosa, Kans	.....do	1868	12.83
11202	H. P. Newton, Oswego, Kans	.....do	1872 and 1874	264.98
11203	Hiram K. Stinson, Ottawa, Kans	.....do	1867	39.66
11204	James A. Brooks, Ottawa, Kans	.....do	1867 and 1868	48.26
11205	Chas. Miller, Palermo, Kans	.....do	1866 and 1868	38.76
11206	John McReynolds, Paola, Kans	.....do	1866 and 1867	350.08
11207	James W. Mackey, Pomona, Kans	.....do	1872 and 1874	90.12
11208	L. W. Harris, Plymouth, Kans	.....do	1866 and 1868	11.56
11209	Jesse Wilkins, Quenemo, Kans	.....do	1871 and 1872	40.93
11210	John F. Beckman, Randolph, Kans	.....do	....do	93.84
	.....do	.....do	1872 and 1874	180.64

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11211	J. C. Iseman, Ridgeway, Kans	Compensation of postmasters readjusted, etc.	1871 and 1872	$35.65
11212	George Nevarre, Rossville, Kans	do	1868 and 1870	7.48
11213	H. Kline, Rossville, Kans	do	1872 and 1874	79.82
11214	B. F. Hollenbeck, Sawnee, Kans	do	do	85.12
11215	Thomas W. Stuttard, Sherman City, Kans.	do	1871 and 1872	14.55
11216	George N. Snell, Shirley, Kans	do	1872 and 1874	15.78
11217	Horace Tucker, Sigel, Kans	do	do	23.02
11218	J. W. Waggoner, Spring Hill, Kans	do	1873 and 1874	132.54
11219	I. D. Casad, Squiresville, Kans	do	1866 and 1868	37.90
11220	John S. Duncan, Stranger, Kans	do	1870 and 1872	48.55
11221	Samuel Hollister, Sumner, Kans	do	1866 and 1868	2.63
11222	Henry Hiatt, Twin Mound, Kans	do	do	16.60
	do	do	1872 and 1874	21.24
11223	John S. Tyler, Tyler, Kans	do	1868 and 1870	11.44
	do	do	1870 and 1872	8.52
	do	do	1872 and 1874	2.32
11224	A. Robertson, Urbana, Kans	do	do	25.60
11225	Chas. Williamson, Washington, Kans	do	1868	6.12
11226	J. W. Graham, Wetmore, Kans	do	1872	19.25
11227	A. O. McCreary, Wetmore, Kans	do	1872 and 1874	164.86
11228	Levi Wilhelm, Winchester, Kans	do	1866 and 1868	41.72
11229	Levi G. Porter, Xenia, Kans	do	1872 and 1874	31.90
11230	Isaac Surber, Adams Mills, Ky	do	1870 and 1872	12.92
11231	S. C. Gooch, Adairsville, Ky	do	1872 and 1874	75.38
11232	Wm. Perkins, Albany, Ky	do	1870	3.00
11233	Fayette Smith, Allensville, Ky	do	1868 and 1870	76.32
	do	do	1870 and 1872	74.44
	do	do	1872 and 1874	77.60
11234	L. E. Shepard, Ashland, Ky	do	1866 and 1868	389.10
	do	do	1870 and 1872	270.72
11235	Joseph Holladay, Athens, Ky	do	1868 and 1870	25.14
11236	James H. Schoolfield, Augusta, Ky	do	1871 and 1872	79.23
	do	do	1872 and 1874	164.66
11237	M. H. Eggner, Aurora, Ky	do	1868 and 1870	24.22
11238	Richard Radford, Bagdad, Ky	do	1866 and 1868	44.66
11239	W. H. West, Bainbridge, Ky	do	1868 and 1869	9.22
11240	J. H. Fitzhugh, Baugh's Station, Ky	do	1868 and 1870	8.52
	do	do	1870 and 1872	2.48
11241	J. N. Brafford, Barboursville, Ky	do	1868	23.36
11242	David S. Thomas, Beattyville, Ky	do	1866 and 1868	17.30
11243	P. B. Gatewood, Bedford, Ky	do	1872 and 1874	43.93
11244	James Bryson, Belleview, Ky	do	1866 and 1868	8.46
	do	do	1868	7.32
11245	S. S. Lander, Belleview, Ky	do	1869 and 1870	21.96
11246	H. B. Clark, Belleview, Ky	do	1871 and 1872	37.65
11247	R. T. Coleman, Benson, Ky	do	1870 and 1871	17.61
11248	Thomas T. Porter, Berry's Lick, Ky	do	1866 and 1868	8.26
11249	Samuel P. Baird, Bethel, Ky	do	1868	9.43
11250	J. C. Witt, Big Hill, Ky	do	1868 and 1870	11.34
	do	do	1870 and 1872	9.12
11251	G. H. Gardner, Big Clifty, Ky	do	1867 and 1868	11.70
11252	A. R. Morris, Big Spring, Ky	do	1866 and 1868	80.08
11253	R. M. Nelson, Birdsville, Ky	do	1868 and 1870	5.22
11254	Jonas A. Birks, Birk's City, Ky	do	1866 and 1868	4.36
11255	Ann Warden, Blandville, Ky	do	1868 and 1870	87.26
11256	Samuel C. Huston, Bloomfield, Ky	do	1869	26.08
11257	Volney Gore, Bloomfield, Ky	do	1870	13.04
	do	do	1870 and 1872	185.44
11258	James Wilson, Bohon, Ky	do	1867 and 1868	6.02
	do	do	1868 and 1870	16.26
11259	John B. Gregory, Boone Furnace, Ky	do	1866 and 1867	7.33
11260	Stephen P. Hogg, Booneville, Ky	do	1866 and 1868	13.14
	do	do	1872 and 1874	12.16
11261	J. D. Perrymoan, Boston, Ky	do	1870 and 1872	70.70
	do	do	1872 and 1874	16.63
11262	J. W. Hall, Boston Station, Ky	do	1868 and 1870	27.44
11263	Chas. Asher, Bowling Green, Ky	do	1866 and 1868	1,088.76
11264	Leroy C. Boyd, Boyd's Station, Ky	do	do	63.82
	do	do	1868 and 1870	50.64
11265	S. W. Norton, Bradford, * Ky	do	1866 and 1868	39.34
	do	do	1868 and 1870	26.24
	do	do	1870 and 1871	31.73
11266	Jo. Sarber, Bradfordsville, Ky	do	1866 and 1868	8.22
11267	Geo. W. Lytle, Bradford,* Ky	do	1871 and 1872	23.79
11268	W. H. Richardson, Brandenburgh, Ky	do	1868 and 1869	143.87
11269	J. M. Brewer, Brewer's Mill, Ky	do	1868 and 1870	20.92
	do	do	1870 and 1872	12.80

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11269	J. M. Brewer, Brewer's Mill, Ky	Compensation of postmasters readjusted, etc.	1872 and 1873	$4.80
11270	W. B. Chandler, Briensburgh, Ky	do	do	25.86
	do	do	1870 and 1872	25.24
11271	Jno. W. Jackson, Bridgeport, Ky	do	1867 and 1868	16.57
11272	G. P. Freese, Brookville, Ky	do	1866 and 1868	87.16
	do	do	1868 and 1870	41.20
	do	do	1870 and 1871	26.73
11273	Z. W. T. Pinnell, Brownsborough, Ky	do	1866 and 1868	42.96
	do	do	1872 and 1874	26.52
11274	Chris. T. Miller, Bryantsville, Ky	do	1866 and 1868	147.42
11275	J. F. Hatten, Buchanan, Ky	do	do	6.34
	do	do	1868 and 1870	6.02
	do	do	1870 and 1872	11.54
	do	do	1872 and 1874	30.94
11276	Wm. Ray, jr., Buckeye, Ky	do	1870	3.44
	do	do	1870 and 1872	5.98
11277	Isaac Foster, Buckhorn, Ky	do	1868 and 1869	4.95
11278	Dudley Rouse, Burlington, Ky	do	1869	5.71
	do	do	1870 and 1872	57.22
11279	Jo. B Hanes, Burlington, Ky	do	1868 and 1869	45.99
11280	John D. Tally, sr., Cabin Creek, Ky	do	1868 and 1870	7.52
11281	Robert I. Gillispie, Cabin Creek, Ky	do	1872 and 1874	35.00
11282	F. B. Attlebury, Cacey's Station, Ky	do	1870 and 1871	7.03
11283	H. M. Gorton, Cadiz, Ky	do	1872 and 1874	200.72
11284	Philip W. Wright, Calhoun, Ky	do	1866 and 1868	104.88
11285	Douglas Little, Calhoun, Ky	do	1870 and 1872	86.44
	do	do	1872 and 1874	54.76
11286	H. Noltenius, Cairo, Ky	do	1870 and 1872	7.86
11287	Alfred C. Rouse, California, Ky	do	1867	31.86
11288	James Y. Tilford, Caneyville, Ky	do	1873 and 1874	12.04
11289	Philip J. Snyder, Centre, Ky	do	1868 and 1869	5.92
	do	do	1866 and 1868	36.00
11290	Bailey Tompkins, Canton, Ky	do	1868 and 1870	42.62
11291	James F. Sandefer, Campbellsburgh, Ky	do	1866 and 1868	19.38
11292	Geo. A. Fisher, Carlisle, Ky	do	1872 and 1874	97.56
11293	Joseph Bridges, Carrsville, Ky	do	1871 and 1872	14.91
11294	Wm. Knostman, Catlettsburgh, Ky	do	1866	141.95
11295	Thomas J. Ewing, Catlettsburgh, Ky	do	1866 and 1868	714.44
11296	Andrew W. Mahaffey, Carthage, Ky	do	do	28.36
	do	do	1868 and 1870	8.60
	do	do	1870 and 1872	3.36
	do	do	1872	1.34
11297	John Bunger, Caseyville, Ky	do	1868 and 1869	64.32
11298	D. A. Brooks, Caseyville, Ky	do	1869 and 1870	32.13
	do	do	1872 and 1874	132.16
11299	Robt. N. Richardson, Centre Point, Ky	do	1870 and 1872	2.88
11300	B. F. Moore, Centreville, Ky	do	1866 and 1868	34.77
11301	James W. Green, Chestnut Grove, Ky	do	1869 and 1870	6.16
	do	do	1870 and 1872	19.22
	do	do	1872 and 1874	19.40
11302	I. P. Wilcoxson, Christiansburgh, Ky	do	do	33.86
11303	H. W. Motley, Claypool, Ky	do	1867 and 1868	4.23
	do	do	1870 and 1872	12.36
	do	do	1872 and 1874	14.84
11304	Jno. S. McKendrick, Clay Village, Ky	do	1867 and 1868	24.31
11305	W. S. Kent, Clay Village, Ky	do	1866	16.21
11306	Geo. W. Hoke, Clay Village, Ky	do	1868	8.11
	do	do	1870 and 1872	44.02
	do	do	1872 and 1873	35.44
11307	Jno. C. McGehee, Clifty, Ky	do	1872 and 1874	7.56
	do	do	1870 and 1872	3.10
11308	M. B. Dent, Clifton Mills, Ky	do	1868 and 1870	8.12
	do	do	1870 and 1872	9.04
11309	T. W. Ashley, Clinton, Ky	do	do	50.40
11310	Jno. C. Hist, Cloverport, Ky	do	1866 and 1868	122.02
	do	do	1870 and 1872	84.24
	do	do	1872 and 1874	116.90
11311	Thomas Meredeth, Coalton, Ky	do	1870 and 1872	112.80
	do	do	1872 and 1874	43.12
11312	Jno. F. Hare, Cold Spring, Ky	do	1866 and 1867	9.00
11313	Thomas Jenkins, Cold Spring, Ky	do	1867 and 1868	24.42
11314	Benjamin F. Caldwell, Caldwell's store, Ky.	do	1868 and 1870	65.08
11315	James Ingels, Colemansville, Ky	do	1866 and 1868	37.04
	do	do	1868	1.96
11316	J. B. Crouch, Colemansville, Ky	do	1868 and 1870	13.69
	do	do	1870 and 1871	6.59
11317	M. Limerick, Colemansville, Ky	do	1871 and 1872	10.98
11318	S. K. Rhorer, Columbia, Ky	do	1866	44.63

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11319	James G. Taylor, Columbia, Ky	Compensation of postmasters readjusted, etc.	1873 and 1874	$107.70
11320	James M. Moore, Columbus, Ky	do	1868 and 1869	94.07
11321	R. D. Taylor, Concord, Ky	do	1866 and 1868	107.58
	do	do	1868 and 1869	51.78
11322	Geo. T. Kennedy, Cool Springs, Ky	do	1870 and 1872	14.90
11323	Benj. B. Mozee, Cordova, Ky	do	1866 and 1868	26.82
	do	do	1868	1.40
11324	John Edminston, Crab Orchard, Ky	do	1866 and 1868	66.62
11325	Chas. B. Ryan, Creelsborough, Ky	do	1868	2.56
11326	J. H. Simpson, Creelsborough, Ky	do	1868 and 1870	17.92
11327	James T. Taylor, Crittenden, Ky	do	1867 and 1868	45.88
11328	Weden O'Neal, Crittenden, Ky	do	1867	22.94
11329	A. S. Byers, Crittenden, Ky	do	1870 and 1871	14.29
11330	R. T. Taylor, Cromwell, Ky	do	1868 and 1869	24.70
11331	Alfred K. Leach, Cromwell, Ky	do	1871 and 1872	32.59
	do	do	1872 and 1874	39.32
11332	R. M. Moss, Cumberland Ford, Ky	do	1868	1.04
11333	J. A. McCain, Curdsville, Ky	do	1871 and 1872	3.75
11334	S. H. Renfro, Dallas, Ky	do	1866	.5.26
11335	H. H. Brinkley, Dallas, Ky	do	1866 and 1867	15.78
11336	Louis P. Stone, Dayton, Ky	do	1870 and 1872	165.24
	do	do	1872 and 1873	37.51
11337	Thomas M. Rause, De Mossville, Ky	do	1866 and 1867	11.35
11338	James V. Mileham, De Mossville, Ky	do	1867 and 1868	15.15
11339	H. B. Cushman, Dover, Ky	do	1866	12.30
11340	Jno. A. Sroufe, Dover, Ky	do	1866 and 1867	66.50
11341	Jno. J. Runyan, Dover, Ky	do	1868	13.30
	do	do	do	15.06
11342	J. H. Smith, Dry Fork, Ky	do	1870 and 1872	8.96
11343	Jno. R. Duncan, Duncan, Ky	do	do	6.82
	do	do	1872 and 1874	18.90
11344	Wm. H. Eaton, Eaton Mills, Ky	do	1866	13.47
11345	W. A. Stewart, Eagle Hill, Ky	do	1871 and 1872	6.06
11346	George Perry, East Fork, Ky	do	1870 and 1872	16.10
	do	do	1872 and 1873	6.82
11347	Warren Washington, Elkton, Ky	do	1868 and 1869	42.13
11348	Robert J. Jewell, Elk Creek, Ky	do	1866 and 1868	21.40
	do	do	1870 and 1872	15.50
	do	do	1872 and 1874	19.70
11349	H. W. Hogan, Elliston, Ky	do	1866 and 1868	13.30
	do	do	1869	20.09
11350	James Shanley, Fairfield, Ky	do	1866 and 1868	30.72
	do	do	1868 and 1870	58.94
11351	Thomas H. Shaw, Fairview, Ky	do	1870 and 1872	28.72
	do	do	1872 and 1874	5.90
11352	A. W. Wilkerson, Falls of Rough, Ky	do	1866 and 1868	21.04
	do	do	1868 and 1870	10.78
	do	do	1870 and 1872	21.26
	do	do	1872 and 1873	14.22
11353	H. A. Newman, Falmouth, Ky	do	1866	16.36
11354	J. W. Robbins, Falmouth, Ky	do	1866 and 1868	114.53
11355	George M. Carey, Farmers, Ky	do	1870 and 1872	28.28
11356	Amost Rist, Ferguson Station, Ky	do	do	25.92
11357	Abraham Hunter, Flat Lick, Ky	do	1870	1.15
11358	A. F. Baughman, Flat Lick, Ky	do	1870 and 1872	8.06
11359	Alexander Evans, Flat Rock, Ky	do	1868 and 1870	30.82
	do	do	1870 and 1871	5.14
11360	B. E. Yelton, Flour Creek, Ky	do	1866 and 1868	14.56
	do	do	1868 and 1870	7.98
	do	do	1870 and 1872	14.58
	do	do	1872 and 1874	19.82
11361	Jackson G. Young, Ford Ferry, Ky	do	1870 and 1872	6.84
11362	M. Wedding, Fordsville, Ky	do	1866	9.34
11363	G. W. R. Cobb, Fordsville, Ky	do	1867 and 1868	26.22
	do	do	1870 and 1872	18.02
11364	A. J. Markley, Foster, Ky	do	1867 and 1868	35.40
11365	A. H. McKinley, Foster, Ky	do	1872 and 1874	41.81
11366	W. H. Peniston, Franklinton, Ky	do	1872	17.01
11367	Thomas B. Johnson, Fredonia, Ky	do	1868	4.94
11368	John L. Norris, Fredericktown, Ky	do	1866 and 1868	49.84
	do	do	1868 and 1870	12.50
	do	do	1870 and 1872	14.98
11369	Henry H. Button, Freedom, Ky	do	1868 and 1870	2.24
	do	do	1870 and 1872	8.24
	do	do	1872 and 1874	3.64
11370	James V. Mileham, Gardnersville, Ky	do	1866	3.08
11371	John A. Linn, Gardnersville, Ky	do	1866 and 1868	21.56
	do	do	1866	.98

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11372	Samuel R. Owens, Garden Cottage, Ky	Compensation of postmasters readjusted, etc.	1868 and 1870	$7.22
	do	do	1870 and 1872	12.74
	do	do	1872 and 1874	15.66
11373	John A. Bell, Georgetown, Ky	do	1866 and 1868	458.33
11374	B. M. Benedict, Gethsemane, Ky	do	1870 and 1872	11.72
11375	J. M. Lewis, Gill's Mills, Ky	do	1868 and 1870	9.18
	do	do	1870 and 1872	15.34
	do	do	1872 and 1874	3.94
11376	W. A. Strange, Glen's Forks, Ky	do	1868 and 1870	12.60
	do	do	1870 and 1872	21.20
	do	do	1872 and 1874	51.76
11377	J. H. Campbell, Gordonsville, Ky	do	1868 and 1870	14.70
	do	do	1871 and 1872	42.72
11378	J. M. Johnson, Graefenberg, Ky	do	1868 and 1870	8.76
	do	do	1870 and 1872	9.80
11379	J. N. Culton, Gray Hawk, Ky	do	1866 and 1868	4.56
	do	do	1868 and 1870	1.04
	do	do	1870 and 1872	1.10
	do	do	1872 and 1874	1.88
11380	M. P. Clarkson, Grayson Springs, Ky	do	1868 and 1870	20.76
11381	T. S. Roup, Green Castle, Ky	do	1866 and 1867	9.34
11382	M. C. Hughes, Green Hall, Ky	do	1866 and 1868	4.38
	do	do	1868 and 1870	4.48
	do	do	1870 and 1872	4.80
	do	do	1872 and 1874	2.76
11383	John Reid, Greensburgh, Ky	do	1866 and 1868	135.80
11384	Benjamin L. Brown, Greenup, Ky	do	1866 and 1867	119.77
11385	J. W. G. Mathews, Gunstead's Mills, Ky	do	1872 and 1874	11.16
11386	Jno. P. Haswell, Hardinsburgh, Ky	do	1866 and 1868	130.06
	do	do	1870 and 1872	47.30
11387	Jno. F. Pettus, Hall's Gap Station, Ky	do	do	11.96
	do	do	1872 and 1874	22.46
11388	R. W. Compton, Hammonville, Ky	do	1867 and 1868	23.41
	do	do	1868 and 1869	3.18
11389	Wm. B. Owsley, Hammonville, Ky	do	1866 and 1867	14.04
11390	Wm. A. Sears, Hanley, Ky	do	1868	12.85
11391	H. H. Masters, Hanley, Ky	do	1869 and 1870	38.56
	do	do	1870 and 1872	54.84
11392	C. J. Lawton, Hartford, Ky	do	1866 and 1868	91.44
	do	do	1872 and 1874	70.64
11393	F. M. Hankin, Harrisonville, Ky	do	1866 and 1868	4.50
	do	do	1872 and 1874	10.22
11394	Mrs. Mollie Carter, Harrodsburgh, Ky	do	1867 and 1868	117.13
11395	W. P. Lacey, Hazle Green, Ky	do	1870 and 1872	29.68
	do	do	1872 and 1874	11.08
11396	F. M. Hunt, Hazle Patch, Ky	do	1870 and 1872	20.38
11397	Jno. H. Wood, Helena, Ky	do	do	11.14
11398	T. C. Albritton, Hickory Grove, Ky	do	do	27.46
	do	do	1872 and 1874	12.34
11399	J. A. H. Keerans, Hillsborough, Ky	do	1866 and 1868	24.84
	do	do	1868 and 1876	119.98
	do	do	1870 and 1872	42.98
	do	do	1872 and 1874	31.94
11400	Wm. H. Cox, Hobbs Station, Ky	do	1870 and 1872	141.14
	do	do	1872 and 1874	249.37
11401	Reuben Dunbar, Horse Shoe Bottom, Ky	do	1866 and 1868	5.18
11402	Ralph E. Cox, Hudsonville, Ky	do	do	35.18
	do	do	1870 and 1872	10.56
11403	R. W. Foster, Hurricane, Ky	do	1872 and 1874	12.42
11404	Wm. Herndon, Irvine, Ky	do	1866	34.09
	do	do	1872 and 1874	70.68
11405	Elijah Hart, Jeffersontown, Ky	do	1866 and 1868	76.92
11406	J. H. Moore, Jericho, Ky	do	1866	8.13
11407	M. T. Moore, Jericho, Ky	do	1870	7.60
11408	J. T. Hayman, Kane, Ky	do	1866 and 1868	53.78
	do	do	1868 and 1870	20.06
11409	Joel McTyre, Kane, Ky	do	1866	7.52
11410	F. S. Wilson, Keene, Ky	do	1867 and 1868	21.97
	do	do	1870 and 1872	60.86
11411	Robert H. Reed, Kenton, Ky	do	1868	1.96
	do	do	1870	15.24
11412	A. H. Wheeler, Kenton Town, Ky	do	1868 and 1870	16.42
11413	Wm. A. Morehead, Kiddville, Ky	do	do	14.40
	do	do	1870	1.93
11414	Thomas I. Bevis, Kinniconick, Ky	do	1866 and 1867	5.78
11415	H. T. Jones, Kirksville, Ky	do	1866 and 1868	59.96
	do	do	1870 and 1872	64.08
	do	do	1872 and 1874	47.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11416	J. B. Aud, Knotteville, Ky	Compensation of postmasters readjusted, etc.	1868 and 1870	$11.61
11417	Lewis Helmick, Knoxville, Ky	do	1871 and 1872	3.97
11418	Lewis R. McMurtry, Lancaster, Ky	do	1866 and 1873	173.36
11419	John C. Foster, La Fayette, Ky	do	1868 and 1870	36.68
11420	Samuel Black, Laurel Bridge, Ky	do	1870 and 1872	28.06
11421	G. W. Rose, Lawrenceburgh, Ky	do	1866 and 1867	51.72
11422	Robert Draffin, Lawrenceburgh, Ky	do	1867 and 1868	86.21
11423	Jonathan F. Payne, Lewisport, Ky	do	1866	3.69
11424	M. J. Cockerell, Lebanon Junction, Ky	do	1872 and 1874	23.64
11425	Edmund C. Spiceland, Linton, Ky	do	1868 and 1870	29.62
11426	W. L. Coleman, Little York, Ky	do	1866 and 1868	13.12
	do	do	1872	.52
11427	Jno. W. Belt, Livermore, Ky	do	1866 and 1868	17.24
	do	do	1868 and 1869	14.37
11428	Sam'l C. Bowman, Locust Grove, Ky	do	1870 and 1872	10.80
11429	Julia E. Ramsey, London, Ky	do	1866	11.35
11430	Hiram G. Litton, London, Ky	do	1866 and 1868	72.05
11431	W. P. Baker, London, Ky	do	1869 and 1870	31.84
	do	do	1870 and 1871	18.05
11432	W. E. Smith, London, Ky	do	1871 and 1872	30.24
11433	M. H. G. Flowers, Logansport, Ky	do	1866 and 1868	16.10
11434	J. G. Melone, Long Run, Ky	do	do	28.70
11435	W. P. Hopkins, Long Run, Ky	do	1870 and 1872	26.44
11436	Alb. Leichhardt, Lost Run, Ky	do	1868 and 1870	8.50
	do	do	1870 and 1872	7.58
	do	do	1872	.73
11437	Thos. S. Ballard, Loretto, Ky	do	1868 and 1869	69.73
11438	Leo Frank, Louisa, Ky	do	1871 and 1872	14.64
11439	Leo H. Ederington, Lovelaceville, Ky	do	1870 and 1872	52.00
	do	do	1872 and 1874	82.46
11440	Mrs. A. T. Spillman, Lowell, Ky	do	1866 and 1868	15.64
11441	David Craig, Lynn Camp, Ky	do	1870 and 1872	2.84
11442	F. M. McAfee, McAfee, Ky	do	1866 and 1868	32.66
	do	do	1870 and 1872	29.44
	do	do	1872 and 1874	44.10
11443	Henry Isham, Mackville, Ky	do	1870 and 1872	48.02
	do	do	1872 and 1874	22.18
11444	Aaron F Smith, Magnolia, Ky	do	do	8.50
11445	Robert G. Potter, Manchester, Ky	do	1868 and 1870	31.38
11446	Edin Penn, Mannsville, Ky	do	1869 and 1870	5.95
11447	Samuel B. Pugh, Marine, Ky	do	1868 and 1870	15.16
	do	do	1870 and 1871	10.65
11448	M. G. Ashby, Mason Creek, Ky	do	1871 and 1872	6.98
11449	Edw. H. Herndon, May's Lick, Ky	do	1866 and 1868	33.60
11450	Newton P. Jackson, Mershon's Cross. Roads, Ky.	do	do	23.40
	do	do	1868 and 1870	15.96
	do	do	1872 and 1874	3.24
11451	F. W. Roy, Middleburgh, Ky	do	1870 and 1872	27.80
	do	do	1872 and 1874	18.08
11452	Jno. S. Moore, Milledgeville, Ky	do	1866 and 1867	9.21
11453	James W. McBride, Milledgeville, Ky	do	1867 and 1868	12.28
11454	Mary S. Bloyd, Millersville, Ky	do	1869 and 1870	1.03
11455	Mary J. Vincent, Millersburgh, Ky	do	1872 and 1874	271.98
11456	James M. Denney, Mill Springs, Ky	do	1870 and 1872	25.64
	do	do	1872 and 1874	17.00
11457	James R. Tult, Milltown, Ky	do	1874	2.20
11458	R. D. Morris, Milton, Ky	do	1872	7.38
	do	do	1872 and 1874	156.76
11459	W. H. Howe, Moorefield, Ky	do	do	20.30
11460	Thomas I. Lee, Monticello, Ky	do	1872 and 1873	54.77
11461	Cyrus Wheat, Montpelier, Ky	do	1868 and 1870	7.55
	do	do	1870 and 1872	16.44
	do	do	1872 and 1874	7.54
11462	Jno. Hargis, Morehead, Ky	do	1866 and 1867	12.27
11463	James W. Johnson, Morehead, Ky	do	1867	20.46
11464	W. C. Rogus, Morgantown, Ky	do	1866 and 1868	52.14
11465	R. H. Dudley, Morgan, Ky	do	1872 and 1874	22.06
11466	H. H. Hulte, Motier, Ky	do	1866 and 1868	12.56
	do	do	1868 and 1870	8.08
	do	do	1870 and 1872	6.90
	do	do	1872	1.71
11467	W. C. Dunn, Morning View, Ky	do	1870	5.04
	do	do	1870 and 1872	12.02
11468	W. R. Pope, Mount Ariel, Ky	do	1866 and 1868	8.74
	do	do	1872 and 1874	7.46
11469	Z. I. Terrell, Mount Eden, Ky	do	1868	62.56
	do	do	1868 and 1870	60.20
	do	do	1870 and 1872	18.90

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11372	Samuel R. Owens, Garden Cottage, Ky	Compensation of postmasters readjusted, etc.	1868 and 1870	$7.22
	do	do	1870 and 1872	12.74
	do	do	1872 and 1874	15.66
11373	John A. Bell, Georgetown, Ky	do	1866 and 1868	458.33
11374	B. M. Benedict, Gethsemane, Ky	do	1870 and 1872	11.72
11375	J. M. Lewis, Gill's Mills, Ky	do	1868 and 1870	9.18
	do	do	1870 and 1872	15.34
	do	do	1872 and 1874	3.94
11376	W. A. Strange, Glen's Forks, Ky	do	1868 and 1870	13.60
	do	do	1870 and 1872	21.20
	do	do	1872 and 1874	51.76
11377	J. H. Campbell, Gordonsville, Ky	do	1868 and 1870	14.70
	do	do	1871 and 1872	42.72
11378	J. M. Johnson, Graefenberg, Ky	do	1868 and 1870	8.76
	do	do	1870 and 1872	9.80
11379	J. N. Culton, Gray Hawk, Ky	do	1866 and 1868	4.56
	do	do	1868 and 1870	1.04
	do	do	1870 and 1872	1.10
	do	do	1872 and 1874	1.88
11380	M. P. Clarkson, Grayson Springs, Ky	do	1868 and 1870	20.76
11381	T. S. Roup, Green Castle, Ky	do	1866 and 1867	9.34
11382	M. C. Hughes, Green Hall, Ky	do	1866 and 1868	4.38
	do	do	1868 and 1870	4.48
	do	do	1870 and 1872	4.80
	do	do	1872 and 1874	2.76
11383	John Reid, Greensburgh, Ky	do	1866 and 1868	135.80
11384	Benjamin L. Brown, Greenup, Ky	do	1866 and 1867	119.77
11385	J. W. G. Mathews, Gunstead's Mills, Ky	do	1872 and 1874	11.16
11386	Jno. P. Haswell, Hardinsburgh, Ky	do	1866 and 1868	130.06
	do	do	1870 and 1872	47.30
11387	Jno. F. Pettus, Hall's Gap Station, Ky	do	do	11.96
	do	do	1872 and 1874	22.46
11388	R. W. Compton, Hammonville, Ky	do	1867 and 1868	23.41
	do	do	1868 and 1869	3.18
11389	Wm. B. Owsley, Hammonville, Ky	do	1866 and 1867	14.04
11390	Wm. A. Sears, Hanley, Ky	do	1868	12.85
11391	H. H. Masters, Hanley, Ky	do	1869 and 1870	38.56
	do	do	1870 and 1872	54.84
11392	C. J. Lawton, Hartford, Ky	do	1866 and 1868	91.44
	do	do	1872 and 1874	76.64
11393	F. M. Hankin, Harrisonville, Ky	do	1866 and 1868	4.50
	do	do	1872 and 1874	10.22
11394	Mrs. Mollie Carter, Harrodsburgh, Ky	do	1867 and 1868	117.13
11395	W. P. Lacey, Hazle Green, Ky	do	1870 and 1872	29.68
	do	do	1872 and 1874	11.08
11396	F. M. Hunt, Hazle Patch, Ky	do	1870 and 1872	20.38
11397	Jno. H. Wood, Helena, Ky	do	do	11.14
11398	T. C. Albritton, Hickory Grove, Ky	do	do	27.46
	do	do	1872 and 1874	12.34
11399	J. A. H. Keerans, Hillsborough, Ky	do	1866 and 1868	24.84
	do	do	1868 and 1876	119.98
	do	do	1870 and 1872	42.98
	do	do	1872 and 1874	31.94
11400	Wm. H. Cox, Hobbs Station, Ky	do	1870 and 1872	141.14
	do	do	1872 and 1874	249.37
11401	Reuben Dunbar, Horse Shoe Bottom, Ky	do	1866 and 1868	5.18
11402	Ralph E. Cox, Hudsonville, Ky	do	do	35.18
	do	do	1870 and 1872	10.56
11403	R. W. Foster, Hurricane, Ky	do	1872 and 1874	12.42
11404	Wm. Herndon, Irvine, Ky	do	1866	34.09
	do	do	1872 and 1874	70.68
11405	Elijah Hart, Jeffersontown, Ky	do	1866 and 1868	76.92
11406	J. H. Moore, Jericho, Ky	do	1866	8.13
11407	M. T. Moore, Jericho, Ky	do	1870	7.60
11408	J. T. Hayman, Kane, Ky	do	1866 and 1868	53.78
	do	do	1868 and 1870	20.66
11409	Joel McTyre, Kane, Ky	do	1866	7.32
11410	F. S. Wilson, Keene, Ky	do	1867 and 1868	21.97
	do	do	1870 and 1872	60.86
11411	Robert H. Reed, Kenton, Ky	do	1868	1.96
	do	do	1870	15.24
11412	A. H. Wheeler, Kenton Town, Ky	do	1868 and 1870	16.42
11413	Wm. A. Morehead, Kiddville, Ky	do	do	14.40
	do	do	1870	1.93
11414	Thomas I. Bevis, Kinniconick, Ky	do	1866 and 1867	5.78
11415	H. T. Jones, Kirksville, Ky	do	1866 and 1868	59.96
	do	do	1870 and 1872	64.08
	do	do	1872 and 1874	47.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11416	J. B. Aud, Knottsville, Ky	Compensation of postmasters readjusted, etc.	1868 and 1870	$11.61
11417	Lewis Helmick, Knoxville, Ky	do	1871 and 1872	3.97
11418	Lewis R. McMurtry, Lancaster, Ky	do	1866 and 1873	173.36
11419	John C. Foster, La Fayette, Ky	do	1868 and 1870	36.68
11420	Samuel Black, Laurel Bridge, Ky	do	1870 and 1872	28.06
11421	G. W. Rose, Lawrenceburgh, Ky	do	1866 and 1867	51.72
11422	Robert Draffin, Lawrenceburgh, Ky	do	1867 and 1868	86.21
11423	Jonathan F. Payne, Lewisport, Ky	do	1866	3.69
11424	M. J. Cockerell, Lebanon Junction, Ky	do	1872 and 1874	23.64
11425	Edmund C. Spiceland, Linton, Ky	do	1868 and 1870	29.62
11426	W. L. Coleman, Little York, Ky	do	1866 and 1868	13.12
	do	do	1872	.52
11427	Jno. W. Belt, Livermore, Ky	do	1866 and 1868	17.34
	do	do	1868 and 1869	14.37
11428	Sam'l C. Bowman, Locust Grove, Ky	do	1870 and 1872	10.80
11429	Julia E. Ramsey, London, Ky	do	1866	11.35
11430	Hiram G. Litton, London, Ky	do	1866 and 1868	72.05
11431	W. P. Baker, London, Ky	do	1869 and 1870	31.84
	do	do	1870 and 1871	18.05
11432	W. E. Smith, London, Ky	do	1871 and 1872	30.24
11433	M. H. G. Flowers, Logansport, Ky	do	1866 and 1868	16.10
11434	J. G. Melone, Long Run, Ky	do	do	28.70
11435	W. P. Hopkins, Long Run, Ky	do	1870 and 1872	26.44
11436	Alb. Leichhardt, Lost Run, Ky	do	1868 and 1870	8.50
	do	do	1870 and 1872	7.58
	do	do	1872	.73
11437	Thos. S. Ballard, Loretto, Ky	do	1868 and 1869	69.73
11438	Leo Frank, Louisa, Ky	do	1871 and 1872	14.64
11439	Leo H. Ederington, Lovelaceville, Ky	do	1870 and 1872	52.00
	do	do	1872 and 1874	82.46
11440	Mrs. A. T. Spillman, Lowell, Ky	do	1866 and 1868	15.64
11441	David Craig, Lynn Camp, Ky	do	1870 and 1872	2.84
11442	F. M. McAfee, McAfee, Ky	do	1866 and 1868	32.66
	do	do	1870 and 1872	29.44
	do	do	1872 and 1874	44.10
11443	Henry Isham, Mackville, Ky	do	1870 and 1872	48.02
	do	do	1872 and 1874	22.18
11444	Aaron F Smith, Magnolia, Ky	do	do	8.50
11445	Robert G. Potter, Manchester, Ky	do	1868 and 1870	31.38
11446	Edin Penn, Mannsville, Ky	do	1869 and 1870	5.25
11447	Samuel B. Pugh, Marine, Ky	do	1868 and 1870	15.16
	do	do	1870 and 1871	10.65
11448	M. G. Ashby, Mason Creek, Ky	do	1871 and 1872	6.98
11449	Edw. H. Herndon, May's Lick, Ky	do	1866 and 1868	33.60
11450	Newton P. Jackson, Mershon's Cross. Roads, Ky.	do	do	23.40
	do	do	1868 and 1870	15.96
	do	do	1872 and 1874	3.24
11451	F. W. Roy, Middleburgh, Ky	do	1870 and 1872	27.80
	do	do	1872 and 1874	18.08
11452	Jno. S. Moore, Milledgeville, Ky	do	1866 and 1867	9.21
11453	James W. McBride, Milledgeville, Ky	do	1867 and 1868	12.28
11454	Mary S. Bloyd, Millersville, Ky	do	1869 and 1870	1.03
11455	Mary J. Vincent, Millersburgh, Ky	do	1872 and 1874	271.98
11456	James M. Denney, Mill Springs, Ky	do	1870 and 1872	25.64
	do	do	1872 and 1874	17.00
11457	James R. Tult, Milltown, Ky	do	1874	2.20
11458	R. D. Morris, Milton, Ky	do	1872	7.38
	do	do	1872 and 1874	156.76
11459	W. H. Howe, Moorefield, Ky	do	do	20.30
11460	Thomas I. Lee, Monticello, Ky	do	1872 and 1873	54.77
11461	Cyrus Wheat, Montpelier, Ky	do	1868 and 1870	7.55
	do	do	1870 and 1872	16.44
	do	do	1872 and 1874	7.54
11462	Jno. Hargis, Morehead, Ky	do	1866 and 1867	12.27
11463	James W. Johnson, Morehead, Ky	do	1867	20.46
11464	W. C. Rogus, Morgantown, Ky	do	1866 and 1868	52.14
11465	R. H. Dudley, Morgan, Ky	do	1872 and 1874	22.06
11466	H. H. Hulte, Motier, Ky	do	1866 and 1868	12.56
	do	do	1868 and 1870	8.08
	do	do	1870 and 1872	6.90
	do	do	1872	1.71
11467	W. C. Dunn, Morning View, Ky	do	1870	5.04
	do	do	1870 and 1872	12.02
11468	W. R. Pope, Mount Ariel, Ky	do	1866 and 1868	8.74
	do	do	1872 and 1874	7.46
11469	Z. I. Terrell, Mount Eden, Ky	do	1868	62.56
	do	do	1868 and 1870	40.20
	do	do	1870 and 1872	18.90

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11470	T. G. Rigg, Mount Olivet, Ky	Compensation of postmasters readjusted, etc.	1870 and 1872	$35.84
	do	do	1872 and 1874	28.04
11471	Henry D. Rucker, Mount Savage, Ky	do	1867 and 1868	12.50
11472	W. H. Jacobs, Mount Savage, Ky	do	1866 and 1867	9.37
11473	Sidney L. Johnson, Mount Sherman, Ky	do	1867 and 1868	26.99
11474	W. T. Johnson, Mount Sherman, Ky	do	1874	6.78
11475	Chas. Kistley, Mount Vernon, Ky	do	1866 and 1868	158.18
	do	do	1870 and 1872	59.74
	do	do	1872 and 1874	138.14
11476	D. T. Moneypenny, Munfordville, Ky	do	do	158.04
	do	do	1866 and 1868	408.42
11477	Robert Stevenson, Murphysville, Ky	do	do	20.86
11478	R. S. Hudson, Murphysville, Ky	do	1869 and 1870	3.29
	do	do	1870	1.66
11479	J. L. May, Nevada, Ky*	do	1873 and 1874	15.66
11480	F. Head, New Hope, Ky	do	1870 and 1872	59.62
	do	do	1872 and 1874	60.68
11481	H. H. Carter, New Market, Ky	do	1866 and 1868	66.68
11482	James W. Moss, Nevada, Ky*	do	1868 and 1870	6.42
	do	do	1870 and 1872	46.04
	do	do	1872 and 1873	26.10
11483	Isaac Kingrey, Nobob, Ky	do	1866	2.80
11484	Jos. M. Allen, Nolin, Ky	do	1868	8.95
11485	J. B. Stivers, North Middletown, Ky	do	1870 and 1872	79.90
11486	Thos. G. Steers, North Fork, Ky	do	1866 and 1868	14.36
11487	J. M. Hampton, O'Bannon, Ky	do	1872 and 1874	28.90
11488	A. F. Whitaker, Oddville, Ky	do	1866 and 1867	7.47
11489	Ransom Lancaster, Oddville, Ky	do	1867 and 1868	14.93
	do	do	1870 and 1872	22.68
	do	do	1872 and 1874	12.84
11490	Jacob Cochran, Oil Works, Ky	do	1866 and 1867	39.55
11491	Johnson Scott, Olive Hill, Ky	do	1866	5.21
11492	James A. Watson, Olive Hill, Ky	do	1867 and 1868	15.36
	do	do	1872 and 1872	30.52
11493	B. G. Chickering, Orell, Ky	do	1871 and 1872	19.54
	do	do	1872 and 1874	9.00
11494	A. E. Gooch, Osceola, Ky	do	1866 and 1868	19.24
	do	do	1870 and 1872	14.68
11495	E. J. Roberts, Owenton, Ky	do	1870 and 1871	30.01
11496	Simeon Crane, Owingsville, Ky	do	1866 and 1868	82.30
	do	do	1868 and 1869	70.57
11497	Douglass P. Moore, Oxford, Ky	do	1868 and 1870	11.90
	do	do	1870 and 1871	8.28
11498	S. G. Maret, Paint Lick, Ky	do	1868 and 1870	21.14
11499	Frank Preston, Paintsville, Ky	do	do	130.17
11500	Wm. R. Truitt, Palma, Ky	do	1872 and 1874	28.24
11501	R. E. Glenn, Paradise, Ky	do	1871 and 1872	40.39
	do	do	1872 and 1874	41.06
11502	Joseph Williams, Paynesville, Ky	do	do	10.82
11503	M. T. Moore, Pendleton, Ky	do	1871 and 1872	38.65
11504	Jefferson J. Polk, Perryville, Ky	do	1870 and 1872	99.92
	do	do	1872 and 1874	73.26
11505	Jno. Nelson Green, Petersburgh, Ky	do	1866 and 1867	14.69
11506	J. N. Early, Petersburgh, Ky	do	1867 and 1868	29.19
11507	J. R. Bryant, Pleasant Hill, Ky	do	1866 and 1868	29.84
	do	do	1868 and 1870	119.26
	do	do	1870 and 1872	126.89
11508	Humphrey Sparks, Pleasantville, Ky	do	do	26.84
11509	J. R. Givens, Providence, Ky	do	1868 and 1870	8.58
	do	do	1870 and 1872	57.24
11510	James F. Blount, Proctor, Ky	do	1867 and 1868	24.27
11511	Simpson Kelly, Proctor, Ky	do	1870 and 1872	14.98
	do	do	1872 and1873	2.29
11512	J. J. Crouch, Poplar Grove, Ky	do	1866 and 1868	16.30
11513	Joel H. Kemper, Poplar Grove, Ky	do	1870	1.79
11514	D. W. Litster, Poplar Plains, Ky	do	1866 and 1868	27.00
	do	do	1868 and 1870	57.28
	do	do	1872 and 1874	33.70
11515	L. F. Boulware, Port Royal, Ky	do	do	.52
11516	G. A. Lee, Quality Valley, Ky	do	1870	2.92
	do	do	1870 and 1872	9.24
11517	Henry McKee, Quincy, Ky	do	1866 and 1867	6.01
11518	S. R. Morse, Quincy, Ky	do	1874	3.50
11519	W. W. Smith, Rabbittsville, Ky	do	1870 and 1872	5.92
	do	do	1866 and 1868	14.22
	do	do	1872 and 1874	5,10
11520	S. W. Carrier, Raccoon, Ky	do	1868 and 1870	8.08
11521	John W. Corder, Readyville, Ky	do	do	5.08
	do	do	1870 and 1872	6.74

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11622	J. H. Tebbe, Carrollton, La	Compensation of postmasters readjusted, etc.	1868 and 1869	$27.41
11623	S. L. Henry, Carrollton, La	do	1869 and 1870	27.41
	do	do	1870 and 1872	110.68
11624	Wm. C. James, Cotile, La	do	1871	6.81
11625	D. Kobleur, Cypremort, La	do	1870 and 1872	114.98
11626	Octave Picot, Cypremort, La	do	1872	16.42
	do	do	1872 and 1874	43.08
11627	Jos. Cappel, Evergreen, La	do	1870 and 1872	124.88
11628	J. E. Butler, Forksville, La	do	1871 and 1872	24.82
11629	Martha A. Cockerham, Funny Louis, La.	do	1870 and 1872	5.26
	do	do	1873 and 1874	5.49
11630	O. B. Sarpy, Jesuits' Bend, La	do	1871 and 1872	6.98
11631	Wm. G. Spilker, Keatchie, La	do	1873 and 1874	17.45
11632	Spiser Jones, Labadieville, La	do	1870 and 1872	78.80
	do	do	1872 and 1874	30.20
11633	Jas. A. Cheatham, Log Town, La	do	do	7.50
	do	do	1870 and 1872	25.62
11634	George Watt, Milliken's Bond, La	do	1871 and 1872	204.13
11635	George A. Mathews, Montgomery, La	do	1870 and 1872	123.66
	do	do	1872 and 1874	42.44
11636	B. F. Parnell, Mount Lebanon, La	do	1868 and 1869	46.56
11637	L. Tanner, Terre Bonne, La	do	1870 and 1872	42.44
11638	Hiram T. Smith, Vernon, La	do	do	117.04
	do	do	1873	23.73
11639	A. Millspaugh, Washington, La	do	1870 and 1872	431.80
11640	J. Arthur Porche, Waterloo, La	do	do	22.50
11641	A. F. Macomber, Abbot Village, Me	do	1866 and 1868	24.82
11642	Jacob H. Lovejoy, Albany, Me	do	186- and 1868	11.56
	do	do	1872 and 1874	7.60
11643	D. S. Drake, Albion, Me	do	1866 and 1867	16.15
11644	Geo. F. Hopkins, Albion, Me	do	1867 and 1868	32.51
11645	Jeremiah Spearin, Alexander, Me	do	1872 and 1874	20.15
11646	Ed. Robinson, Alna, Me	do	1866 and 1868	6.62
11647	H. S. McKechnie, Alton, Me	do	do	16.24
	do	do	1870 and 1872	11.58
11648	Geo. Milliken' Alton Village, Me	do	1867 and 1868	4.17
11649	Dan'l. Milliken, Alton Village, Me	do	1866 and 1867	4.17
11650	Joel Valley, Alva, Me	do	1866 and 1868	14.36
11651	Geo. C. White, Amherst, Me	do	do	41.40
	do	do	1870 and 1872	44.34
11652	C. B. Curtis, Amity, Me	do	1868 and 1870	5.38
11653	Jotham C. Metcalf, Anson, Me	do	1866 and 1868	43.36
11654	J. H. Ramsdell, Atkinson, Me	do	do	10.66
	do	do	1868 and 1870	14.54
11655	Jas. Robbins, Baileyville, Me	do	1866 and 1868	14.08
	do	do	1868 and 1870	12.40
	do	do	1870 and 1872	6.10
11656	A. Kelley, Bancroft, Me	do	1866 and 1868	29.06
	do	do	1868 and 1870	36.04
	do	do	1870 and 1872	15.26
11657	Wm. McLellan, Baring, Me	do	1866 and 1868	45.08
	do	do	1868 and 1870	32.58
11658	Wm. A. Morrill, Belmont, Me	do	1870 and 1872	19.18
11659	C. D. Heald, Belgrade Mills, Me	do	1866 and 1867	4.99
11660	David Golden, Belgrade Mills, Me	do	1867 and 1868	10.24
11661	C. Hinds, Benton, Me	do	1866 and 1868	30.20
	do	do	1870 and 1872	24.14
11662	C. Cary, Berry's Mill, Me	do	1867 and 1868	11.11
	do	do	1668 and 1870	13.50
11663	M. C. Kimball, Bethel, Me	do	1866 and 1868	166.04
11664	J. B. Packard, Blanchard, Me	do	do	11.22
11665	S. G. Rumery, Bonny Eagle, Me	do	do	39.96
	do	do	1868 and 1870	15.78
11666	Daniel Carter, Bowdoin Centre, Me	do	1866 and 1868	30.42
11667	Reuben Soule, Bowdoin, Me	do	1871 and 1872	5.72
11668	Tho. R. Kingsbury, Bradford, Me	do	1866 and 1868	122.68
	do	do	1872 and 1874	35.66
11669	G. F. Barton, Bradley, Me	do	1868 and 1870	21.38
11670	Joel Smith, Brighton, Me	do	1866 and 1868	22.42
	do	do	1868 and 1870	8.02
11671	J. S. Huxford, Brooks, Me	do	do	81.22
	do	do	1872 and 1874	49.54
11672	Jos. Walker, Brooksville, Me	do	1866 and 1868	15.98
11673	Sam'l Mason, Brownfield, Me	do	do	119.04
11674	C. L. Dunning, Brownville, Me	do	do	64.06
11675	J. H. De Coster, Buckfield, Me	do	do	80.68
11676	Robt. Trim, Buck's Mills, Me	do	1866	4.54
11677	R. J. Farrington, Burnham Village, Me	do	1870 and 1872	96.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11570	W. C. Tucker, Stonewall, Ky	Compensation of postmasters readjusted, etc.	1872 and 1874	$7.86
11571	John W. Fox, Stony Point, Ky	do	1866 and 1867	10.78
11572	Jonathan Howe, Sugar Creek, Ky	do	1866 and 1868	52.18
	do	do	1870 and 1872	22.06
11573	C. C. Jackson, Sublimity, Ky	do	1872 and 1873	7.01
11574	Charles E. Minter, Traveller's Rest, Ky	do	1866 and 1868	3.00
	do	do	1870 and 1872	9.76
	do	do	1872 and 1874	3.30
11575	John A. Tarwin, Tibbett's Cross Roads, Ky.	do	do	4.26
11576	F. P. Robertson, Tilton, Ky	do	do	27.08
11577	Jos. Altsheier, Three Springs, Ky	do	1866 and 1868	29.94
	do	do	1868 and 1870	12.40
	do	do	1870 and 1872	21.72
	do	do	1872 and 1874	7.68
11578	W. H. Thomson, Tolesborough, Ky	do	1866 and 1868	11.42
	do	do	1868 and 1869	5.14
11579	A. H. Carr, Tolesborough, Ky	do	1872	2.94
	do	do	1871 and 1872	5.98
11580	Webster A. Wallingford, Tolesborough, Ky.	do	1872 and 1874	20.61
11581	A. S. Shrout, Upper Blue Lick, Ky	do	1868 and 1870	8.82
	do	do	1870 and 1672	8.44
11582	M. W. Rollins, Union Star, Ky	do	1867 and 1868	20.82
11583	Robert G. Barber, Vanceburgh, Ky	do	1866 and 1868	102.52
	do	do	1868 and 1870	222.32
	do	do	1870 and 1872	173.52
11584	John C. VanDyke, VanDyke's Mills, Ky	do	1866 and 1868	14.61
11585	T. D. Sheets, View Grove, Ky	do	1873 and 1874	6.67
11586	Samuel Berryman, Vienna, Ky	do	1866 and 1868	3.48
11587	Z. F. Elkin, Vienna, Ky	do	1871 and 1872	4.78
11588	F. P. Caldwell, Visalia, Ky	do	1866 and 1868	50.86
11589	D. Word, Washington, Ky	do	1868	8.26
11590	C. J. Sievors, Waterloo, Ky	do	1866 and 1868	69.12
	do	do	1868 and 1870	5.84
11591	Jacob Caron, Warsaw, Ky	do	1870 and 1872	136.08
11592	Flemon S. Tuttle, Waynesburgh, Ky	do	1866 and 1868	10.60
	do	do	1870 and 1871	8.25
11593	M. T. Reynolds, Waynesburgh, Ky	do	1871 and 1872	11.00
11594	M. L. Sloan, Weaverton, Ky	do	1866 and 1868	7.84
11595	Geo. W. Webb, Webbville, Ky	do	1870 and 1872	5.32
11596	Martin McGlothtan, Webster, Ky	do	1868 and 1870	29.99
11597	B. H. Wathen, Webster, Ky	do	1870	4.31
	do	do	1870 and 1872	32.40
11598	Jno. G. Chambers, Westport, Ky	do	1866 and 1868	55.72
	do	do	1868 and 1870	35.78
11599	Mrs. Ann E. McCoy, West Point, Ky	do	do	27.47
11600	S. B. Jump, West Union, Ky	do	do	4.14
	do	do	1872 and 1874	12.26
11601	Richard Mann, Whitesburgh, Ky	do	1870 and 1872	11.68
	do	do	1872	2.78
11602	Mahlon Hatfield, White Mills, Ky	do	1870 and 1872	8.12
	do	do	1872 and 1874	30.16
11603	Seth Freeman, Whitley Court House, Ky.	do	1867 and 1868	33.09
	do	do	1868	2.14
	do	do	1868 and 1870	13.94
11604	Sam'l M. Cain, Whitesville, Ky	do	1872 and 1874	43.86
11605	Jno. W. Carter, White Sulphur, Ky	do	1872 and 1873	19.24
11606	Joseph Cordier, Williams, Ky	do	1871 and 1872	15.94
11607	Thos. S. Porter, Williamstown, Ky	do	1866 and 1868	50.36
11608	Jno. W. Day, Wilsonville, Ky	do	1866 and 1867	13.23
11609	J. W. Stimson, Wingo Station, Ky	do	1870 and 1871	21.00
11610	B. F. Turner, Winchester, Ky	do	1868 and 1869	33.03
11611	James T. Carson, Woodberry, Ky	do	1866 and 1868	42.28
	do	do	1870 and 1871	21.15
11612	Wm. A. Daugherty, Wooldridge's Store, Ky.	do	1871 and 1872	14.30
	do	do	1873 and 1874	8.94
11613	Samuel Ulery, Wyoming, Ky	do	1867 and 1868	5.47
11614	Marcus W. Bailey, Wyoming, Ky	do	1866 and 1867	4.12
11615	R. F. Manly, Wyoming, Ky	do	1868 and 1869	3.16
11616	Andrew J. Dunn, Zion, Ky	do	1870 and 1872	16.68
	do	do	1872 and 1874	29.78
11618	John N. Ryant, Arcadia, La	do	1868 and 1869	24.55
11619	Matilda Johnson, Algiers, La	do	1871	35.98
11620	Elizabeth A. Hise, Athens, La	do	1870 and 1872	17.96
	do	do	1872	6.84
11621	L. George, Atlanta, La	do	1870 and 1872	5.50
	do	do	1872	7.10

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11735	A. O. Pike, East Fryeburgh, Me	Compensation of postmasters readjusted, etc.	1866 and 1868	$6.42
	do	do	1868 and 1870	20.72
	do	do	1870 and 1872	13.02
	A. O. Pike, East Fryeburgh, Me	do	1872 and 1874	7.90
11736	P. Wilson, East Holden, Me	do	1866 and 1868	8.68
	do	do	1868	3.75
11737	Mrs. A. Ludden, East Lincoln, Me	do	1872 and 1874	51.44
11738	Henry Small, East Limington, Me	do	1866 and 1868	26.66
11739	Mary S. Porter, East Lowell, Me	do	1872 and 1874	22.60
11740	Joseph Lasker, East Montville, Me	do	1868 and 1870	8.12
11741	Philip Wilson, East Newport, Me	do	1871 and 1872	14.02
11742	D. G. Curtis, East Newport, Me	do	1870 and 1871	14.02
11743	I. S. Dunn, East North Yarmouth, Me	do	1866 and 1868	85.28
	do	do	1870 and 1872	11.24
	do	do	1872 and 1874	26.86
11744	M. Currier, East Orrington, Me	do	1866 and 1868	39.60
	do	do	1868 and 1870	19.48
11745	J. K. Lovewell, East Otisfield, Me	do	do	26.56
11746	N. Pendexter, East Parsonfield, Me	do	1866 and 1868	44.04
	do	do	1868	20.70
11747	B. R. Pray, East Parsonfield, Me	do	1869 and 1870	44.71
11748	L. B. Knight, East Poland, Me	do	1868 and 1870	167.76
	do	do	1870 and 1872	191.90
11749	Joel E. Young, East Trenton, Me	do	1866 and 1868	10.78
11750	L. D. Coggins, East Trenton, Me	do	1868	1.54
	do	do	1868 and 1870	22.08
11751	A. A. Rockliff, Easton, Me	do	1866 and 1868	16.16
11752	Tho. G. Davis, Easton, Me	do	1872 and 1874	9.43
11753	Jos. Bean, East Sullivan, Me	do	1866 and 1868	12.90
11754	New'l M Varney, East Sumner, Me	do	1866 and 1867	22.18
11755	S. M. Baker East Windham, Me	do	1866 and 1868	12.26
	do	do	1868 and 1870	9.98
11756	A. J. Monell, East Windham, Me	do	1871 and 1872	6.50
11757	S. M. Baker, East Windham, Me	do	1870 and 1871	12.89
11758	C. G. Thompson, Eddington Bend, Me	do	1866 and 1868	19.32
11759	A. F. Hadley, Eden, Me	do	1866 and 1867	9.43
11760	James Murch, Ellingwood's Corner, Me	do	do	26.42
	do	do	1868 and 1870	9.02
11761	Geo. R. Lord, Ellsworth Falls, Me	do	1866 and 1867	11.15
11762	Sam'l Hasty, Etna, Me	do	1866 and 1868	34.41
11763	James Chase, Exeter Mills, Me	do	1870 and 1872	12.92
	do	do	1872	3.47
11764	Henry A. Archer, Fairfield, Me	do	1868 and 1870	32.02
	do	do	1870 and 1872	29.38
11765	E. F. Fowler, Fairfield Corner, Me	do	do	35.24
11766	C. A. Day, Farmington Falls, Me	do	1871 and 1872	85.54
	do	do	1872 and 1874	114.10
11767	R. C. Turner, Fayette Ridge, Me	do	1866 and 1868	23.22
	do	do	1872 and 1874	3.18
11768	A. C. Cary, Fort Fairfield, Me	do	1868	16.60
	do	do	1868 and 1870	112.38
11769	Jos. M. Blaisdell, Franklin, Me	do	1866 and 1868	52.16
	do	do	1872 and 1874	62.08
11770	B. B. Allen, Freeman, Me	do	1867 and 1868	2.75
	do	do	1870 and 1872	7.60
11771	E. Wells, Freeport, Me	do	1866 and 1868	170.24
11772	M. B. Cook, Friendship, Me	do	do	34.94
	do	do	1872 and 1874	8.02
11773	W. G. Emmons, Georgetown, Me	do	1866 and 1868	73.56
	do	do	1868 and 1869	11.06
11774	James Small, Gray, Me	do	1866 and 1868	42.08
11775	H Campbell, Greenbush, Me	do	1870 and 1872	26.16
	do	do	1872 and 1874	22.88
11776	F. Pratt, Green Corner, Me	do	1866 and 1868	43.24
	do	do	1868 and 1870	33.72
	do	do	1870 and 1872	24.64
	do	do	1872 and 1874	19.40
11777	E. T. Collins, Green's Landing, Me	do	1868 and 1870	16.46
11778	Jno. H. Eveleth, Greenville, Me	do	1866 and 1868	105.14
11779	S. Phipps, Hampden, Me	do	do	96.02
11780	S. Crabtree, Hancock, Me	do	1866 and 1867	11.70
11781	Mrs. E. P. Morse, Harpswell Centre, Me	do	1872 and 1874	22.42
11782	L. W. Valentine, Harmony, Me	do	1866 and 1867	28.85
11783	M. C. Osgood, Hartford, Me	do	do	10.57
11784	S. E. Prescott, Hartland, Me	do	1860 and 1868	76.40
11785	Stephen S. Hewes, Herman Pond, Me	do	1868 and 1870	14.66
	do	do	1872 and 1873	26.85
11786	N. B. Hubbard, Hiram, Me	do	1866 and 1868	69.32
	do	do	1868 and 1870	44.10

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11677	R. J. Farrington, Burnham Village, Me.	Compensation of postmasters readjusted, etc.	1872 and 1874	$198.76
11678	L. P. Beath, Booth Bay, Me	do	1866 and 1868	46.12
11679	J. C. Lewis, Buxton Centre, Me	do	do	25.58
11680	Wm. A. Knapp, Byron, Me	do	1870 and 1872	22.62
11681	S. Hilton, Canada Road, Me	do	1872 and 1874	4.84
11682	Abel Prescott, Canaan, Me	do	1866 and 1867	33.09
11683	I. A. Ellisa, Canton Point, Me	do	1868 and 1870	21.14
11684	A. P. Hillman, Cape Elizabeth Depot Me.	do	1866 and 1867	32.16
11685	Jos. Weare, Cape Neddick, Me	do	1866 and 1868	88.78
11686	S. Hutchins, Cape Porpoise, Me	do	1868 and 1870	22.48
	do	do	1870	89.64
11687	J. Teague, Caribou, Me	do	1866 and 1868	16.08
11688	H. Rugglea, Carmel, Me	do	do	103.20
11689	J. Clark, jr., Carritunk, Me	do	1870 and 1872	17.26
11690	J. Knight, Casco, Me	do	1872 and 1874	18.74
11691	C. Rogers, Castine, Me	do	1866 and 1868	222.38
	do	do	1868 and 1870	127.50
11692	Simeon Lombard, Centre Guilford, Me	do	1866 and 1867	4.22
11693	Daniel Wentworth, Centre Lebanon, Me.	do	1866 and 1868	13.00
	do	do	1872 and 1874	32.74
11694	W S. Irish, Centre Lincolnville, Me	do	1869	8.13
11695	George Russell, Centre Lovell, Me	do	1866 and 1868	30.04
11696	Nathan French, Centre Montville, Me	do	1866 and 1867	9.64
11697	Nelson Allen, Centre Montville, Me	do	1870 and 1868	5.77
	do	do	1868 and 1869	7.60
11698	John L. Bean, Centre Montville, Me	do	1869 and 1870	12.68
11699	L. Fisher, Charlotte, Me	do	1866 and 1868	23.30
11700	F. O. Brainard, China Me	do	1867 and 1868	35.53
11701	Truman Wilson, Columbia Falls Me	do	1866 and 1868	93.66
	do	do	1868 and 1870	77.04
11702	E. Doyle, Conway, Me	do	1866 and 1868	19.20
11703	Asoph Sawyer, Cooper, Me	do	1866 and 1868	14.34
	do	do	1870 and 1872	7.16
	do	do	1872 and 1874	7.46
11704	J. L. Robinson, Corinth, Me	do	1866 and 1868	12.75
11705	H. A. Pike, Cornish, Me	do	do	123.12
11706	J. Folsom, Cornville, Me	do	1868 and 1870	24.04
	do	do	1870 and 1871	8.98
11707	Jo. S. Spurling, Cranberry Isles, Me	do	1872 and 1874	10.96
11708	Sol. Brewster, Curtis Corner, Me	do	1866 and 1868	25.18
11709	A. S. Fales, Cushing, Me	do	do	40.63
	do	do	1872 and 1874	8.80
11710	W. H. Irish, Damariscotta Mills, Me	do	1868	6.04
11711	C. Bacon, Damariscotta Mills, Me	do	1866	42.32
11712	W. H. Irish, Damariscotta, Mills, Me	do	1868 and 1870	78.42
	do	do	1870 and 1872	73.34
	do	do	1872 and 1874	22.86
11713	O. D. Stinchfield, Danville, Me	do	1866	7.68
11714	H. W. Ingersoll, Danville, Me	do	1867 and 1868	15.47
	do	do	1872 and 1874	40.30
11715	J. L. Parker, Dedham, Me	do	1866 and 1868	18.32
11716	Jos. Bennett, Denmark, Me	do	1872 and 1874	52.98
	do	do	1866 and 1867	30.88
11717	A. C. Drake, Detroit, Me	do	1866 and 1868	52.05
11718	John Jackson, Dixfield, Me	do	1872	12.10
11719	E. G. Reynolds, Dixfield, Me	do	1874	76.71
11720	Henry Butman, Dixmont, Me	do	1866 and 1868	94.72
11721	Edwin Hill, Dover South Mills, Me	do	1870 and 1872	21.76
11722	Betsey H. Webb, Dresden, Me	do	1866	6.45
11723	Ham. M. Call, Dresden Mills, Me	do	1868 and 1870	21.30
11724	C. E. Libby, Dry Mills, Me	do	do	5.68
11725	J. H. Eveleth, Durham, Me	do	1866 and 1868	54.86
11726	Samuel D. Philpot, Dyer Brook, Me	do	1870 and 1872	2.34
11727	Daniel T. Richardson, East Baldwin, Me.	do	1866 and 1868	16.88
	do	do	1872 and 1874	17.86
11728	J. A. Hurd, East Benton, Me	do	1868 and 1870	17.67
11729	Jas. Hall, East Bodoinham, Me	do	do	24.42
	do	do	1872 and 1874	26.26
11730	M. W. Henry, East Buckport, Me	do	1869 and 1870	12.73
	do	do	1870 and 1872	5.74
11731	Henry K. Dexter, East Corinth, Me	do	1866 and 1868	286.14
11732	W. H. Winslow, East Dixfield, Me	do	do	57.00
	do	do	1868 and 1870	68.80
	do	do	1870 and 1872	52.60
11733	A. Whitney, East Dixmont, Me	do	1866 and 1868	31.24
11734	L. D. Butters, East Exeter, Me	do	do	27.76

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11847	Mary. E. Ryerson, Newry, Me	Compensation of postmasters readjusted, etc.	1871 and 1872	$4.26
11848	A. C. Lermond, North Appleton, Me	do	do	13.00
11849	James Weed, North Baldwin, Me	do	1868	12.42
	do	do	1868 and 1870	2.84
11850	James Alexander, North Belgrade, Me	do	1868 and 1870	14.88
	do	do	1870 and 1872	8.14
11851	W. D. Hastings, North Bethel, Me	do	1868 and 1870	5.98
11852	L. B. Thompson, North Blue Hill, Me	do	1866 and 1868	17.84
11853	R. F. Kingsbury, North Bradford, Me	do	do	78.41
11854	M. D. Kingsbury, North Bradford, Me	do	1868	9.72
11855	Jno. S. Wells, North Brooklin Me	do	1870 and 1871	4.43
11856	E. C. Dodge, North Brooklin, Me	do	1871 and 1872	2.23
	do	do	1872 and 1874	7.68
11857	Wm. Lineburner, North Brooksville, Me	do	1866 and 1868	7.00
	do	do	1868 and 1870	4.24
	do	do	1872	.49
11858	Z. Blake, North Carmel, Me	do	1866 and 1867	11.97
11859	Geo. N. Emerson, North Castine, Me	do	1866 and 1868	28.90
	do	do	1868 and 1869	20.84
11860	Mrs. Almeda Jewell, North Cornville, Me.	do	1866 and 1867	11.54
11861	Jonathan Folsom, North Cornville, Me	do	1867 and 1868	8.65
11862	E. Turner, North Cutler, Me	do	1872 and 1874	5.36
11863	A. T. Moore, North Dixmont, Me	do	1866 and 1868	18.94
11864	Royal Tyler, North Ellsworth, Me	do	1868 and 1870	8.36
	do	do	1872 and 1874	3.94
11865	Chas. Nutler, North Fryeburgh, Me	do	1866 and 1868	14.46
11866	Ira Waterman, North Haven, Me	do	1867	20.67
	do	do	1868 and 1870	35.96
11867	Otis F. Coombs, North Islesborough, Me	do	1866 and 1868	58.56
11868	Wm. P. Sprague, North Islesborough, Me.	do	1872 and 1874	65.88
11869	E. Keyes, North Joy, Me	do	1866 and 1868	59.48
11870	Oliver Hanscom, North Lebanon, Me	do	do	25.94
	do	do	1870 and 1872	17.18
	do	do	1872 and 1874	12.82
11871	J. Woodward, North Leeds, Me	do	1872	13.03
11872	P. P. Burleigh, North Linneus, Me	do	1868 and 1870	10.62
	do	do	1866 and 1868	19.14
	do	do	1870 and 1872	6.26
11873	A. W. Coolidge, North Linneus, Me	do	1866 and 1868	48.70
11874	Joseph Kilgord, North Lowell, Me	do	do	7.82
11875	Geo. P. Goodwin, North Mariaville, Me	do	do	4.78
11876	C. Norton, North Madison, Me	do	1872 and 1874	7.42
11877	Geo. W. King, North Monmouth, Me	do	1870 and 1872	22.54
	do	do	1872 and 1874	28.34
11878	G. Gould, North Monroe, Me	do	1866 and 1868	7.84
	do	do	1868 and 1870	7.46
	do	do	1870 and 1872	7.08
	do	do	1872 and 1874	2.92
11879	A. Bachelder, North Palermo, Me	do	1867 and 1868	6.84
11880	I. Bartlett, North Paris, Me	do	1866	3.86
11881	J. Gould, North Pittston, Me	do	1868 and 1870	10.10
11882	Wm. Small, North Raymond, Me	do	1866 and 1868	12.56
11883	I. Pease, North Searsmont, Me	do	1872 and 1874	8.20
11884	I. C. Closson, North Sedgwick, Me	do	1866 and 1867	9.76
11885	E. Fuller, North Turner, Me	do	1866 and 1868	53.84
11886	Albert Barker, North Turner Bridge, Me	do	do	16.20
11887	H. Fossett, North Union, Me	do	do	39.08
	do	do	1868 and 1870	17.54
11888	T. Rowell, North Vassalborough, Me	do	1866 and 1868	219.44
11889	J. R. Varney, North Vassalborough, Me	do	1868	49.05
	do	do	1868 and 1870	126.36
11890	Jno. Hall, North Vienna, Me	do	1866 and 1868	19.02
	do	do	1870 and 1872	39.96
11891	L. T. Voter, New Vineyard, Me	do	1866 and 1868	37.84
11892	Jos. Bumheimer, North Waldoborough, Me.	do	do	24.60
	do	do	1868 and 1870	9.40
11893	L. Charles, North Waterborough, Me	do	1870 and 1872	9.24
	do	do	1872 and 1874	19.64
11894	S. Howard, North Washington, Me	do	1866 and 1868	19.50
	do	do	1868 and 1870	7.68
11895	J. F. Taylor, North Wayne, Me	do	1866 and 1868	17.56
	do	do	1868 and 1870	34.64
	do	do	1870 and 1872	30.12
11896	James E. Morse, North Whitfield, Me	do	do	21.12
11897	A. A. Gould, North Windham, Me	do	1866 and 1868	21.16
	do	do	1870 and 1872	28.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11786	N. B. Hubbard, Hiram, Me	Compensation of postmasters readjusted, etc.	1870 and 1871	$37.98
11787	Chas. E. Hubbard, Hiram, Me	do	1871	37.98
11788	Jno. Pierce, Hiram, Me	do	1872	25.32
11789	W. M. Adams, Hodgdon, Me	do	1866 and 1867	30.60
11790	J. O. Smith, Hodgdon, Me	do	1868	4.37
	do	do	1868 and 1870	22.72
11791	A. Drake, Hope, Me	do	1866 and 1868	18.20
11792	F. Ingalls, Howland, Me	do	1867 and 1868	1.08
	do	do	1868 and 1870	24.02
	do	do	1870 and 1871	6.36
11793	C. Briggs, Hudson, Me	do	1866 and 1867	30.05
11794	N. Goodrich, Industry, Me	do	1866 and 1868	8.30
11795	D. L. Carlton, Isle au Haut, Me	do	do	12.66
	do	do	1868 and 1870	9.55
11796	Sam'l Johnson, Johnson, Me	do	1866 and 1868	67.84
11797	L. O. Dudley, Jackson Brook, Me	do	1869 and 1870	10.69
11798	S. Noyes, jr., Joy, Me	do	1866 and 1868	42.58
11799	Mr. H. R. C. Avery, Jefferson, Me	do	1866 and 1867	24.47
11800	E. F. Weeks, Jefferson, Me	do	1867 and 1868	27.67
11801	D. Farnsworth, Jonesborough, Me	do	1866 and 1868	15.88
	do	do	1868 and 1870	11.78
	do	do	1872 and 1874	9.88
11802	E. S. Winter, Kingfield, Me	do	1866 and 1867	23.74
11803	Wm. G. Parker, Kittery Depot, Me	do	1866 and 1868	37.76
11804	Jno. H. Foster, Knox, Me	do	do	7.80
11805	T. S. Heal, La Grange, Me	do	do	53.10
11806	S. Fall, Lebanon, Me	do	1868 and 1870	41.22
	do	do	1870 and 1872	27.61
11807	Isaac Starbird, Litchfield Corners, Me	do	1866 and 1868	54.32
11808	G. W. Baker, Litchfield, Me	do	1872 and 1873	4.99
11809	L. P. Goodhue, Linneus, Me	do	1867 and 1868	36.06
	do	do	1868 and 1869	17.48
11810	H. H. Ward, Linneus, Me	do	1869 and 1870	10.98
	do	do	1870 and 1872	59.06
11811	A. J. Tinkham, Locke's Mills, Me	do	1869 and 1870	15.16
11812	Jos. Stickney, Lowell, Me	do	1866 and 1867	34.92
11813	T. Knight, Lowell, Me	do	1868 and 1870	59.66
11814	A. Dwinel, Lyndon, Me	do	1866 and 1868	8.78
	do	do	1868 and 1870	14.18
	do	do	1870 and 1871	5.45
11815	M. M. Foster, Lubec, Me	do	1866 and 1868	53.86
11816	Ira Foster, Machiasport, Me	do	1866	8.75
11817	Wm. B. Snow, Madison, Me	do	1867 and 1866	13.50
11818	E. A. Rollins, Maple Grove, Me	do	1867 and 1868	6.58
11819	S. S. Abbott, Matinicus, Me	do	do	3.77
11820	Asa Smith, Mattawamkeag, Me	do	1866 and 1868	55.38
11821	F. Tourtillotte, Moxfield, Me	do	do	14.88
	do	da	1872 and 1874	6.34
11822	J. Hall, Mechanic's Falls, Me	do	1870 and 1872	351.40
	do	do	1872 and 1874	353.44
11823	W. Smith, Medford, Me	do	1866 and 1868	10.72
11824	J. H. Harthorne, Medford, Me	do	1872 and 1874	8.74
11825	S. O. Dinsmore, Medord Centre, Me	do	do	12.72
11826	E. P. Wells, Mercer, Me	do	1868 and 1869	18.22
11827	S. R. Porter, Mercer, Me	do	1869 and 1870	16.06
11828	Dura Bradford, Mexico, Me	do	1866	5.80
11829	Jo. H. Gleason, Mexico, Me	do	1867 and 1868	16.58
	do	do	1868 and 1869	26.36
11830	A. B. Merrill, Milford, Me	do	1871	19.71
11831	E. R. Perkins, Millbridge, Me	do	1866	7.50
11832	Chas. F. Pray, Millbridge, Me	do	1866 and 1868	52.50
	do	do	1868 and 1869	46.31
11833	J. H. Macomber, Milo, Me	do	1866 and 1868	154.06
11834	Wm. H. Rounds, Minot, Me	do	1870 and 1872	103.66
	do	do	1872 and 1874	60.34
11835	Otis Holden, Moose River, Me	do	1870 and 1872	24.86
11836	G. C. Nealley, Monroe, Me	do	1866 and 1868	112.90
11837	H. O. Hussey, Monticello, Me	do	do	40.66
	do	do	1868 and 1870	14.76
11838	D. P. Wasgatt, Mount Desert, Me	do	1866 and 1867	16.75
11839	R. M. Manseer, Mount Vernon, Me	do	1866	21.83
11840	Bela Townsend, Newfield, Me	do	1870	11.97
	do	do	1870 and 1872	18.76
11841	C. P. Haskell, New Gloucester, Me	do	1866 and 1868	57.60
11842	L. K. Dudley, Newport, Me	do	do	163.52
11843	N. B. Saunders, New Portland, Me	do	1866	10.48
11844	Jno. P. Hodson, New Portland, Me	do	1866 and 1868	73.33
11845	T. B. Ridley, New Sharon, Me	do	1866	18.57
11846	H. E. Dyer, New Sharon, Me	do	1866 and 1868	80.47

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11949	F. Ham, Smyrna Mills, Me	Compensation of postmasters readjusted, etc.	1870 and 1872	$11.90
11950	Albert Gorden, Solon, Me	do	1866 and 1868	80.08
11951	W. Bridgham, South Buddington, Me	do	do	15.10
11952	L. M. Bates, South Brookville, Me	do	1868 and 1870	25.90
	do	do	1870 and 1872	23.44
	do	do	1872 and 1874	25.36
11953	E. R. Staples, South Bridgeton, Me	do	1866 and 1867	29.62
11954	L. M. Bates, South Brookville, Me	do	1868	5.93
11955	J. K. Crommett, South Dover, Me	do	1868 and 1870	8.90
	do	do	1872 and 1874	12.12
11956	T. C. Pinkham, South Durham, Me	do	1866 and 1868	30.40
11957	John F. Wyman, South China, Me	do	1868 and 1870	28.16
	do	do	1870 and 1872	35.76
	do	do	1872 and 1873	16.51
11958	Chas. Bliss, South Freeport, Me	do	1866 and 1868	41.46
11959	Nathan Allen, South Hope, Me	do	do	69.96
11960	D. S. Wing, South Leeds, Me	do	1870 and 1872	6.28
	do	do	1872 and 1874	5.50
11961	J. K. Weston, South Levant, Me	do	1866 and 1868	18.50
	do	do	1870 and 1872	9.00
	do	do	1872 and 1874	20.70
11962	George Forbes, South Lincoln, Me	do	1866 and 1868	14.22
	do	do	1868 and 1869	2.84
11963	Job Chase, South Livermore, Me	do	1866 and 1868	17.10
	do	do	1868 and 1870	10.46
	do	do	1870 and 1872	14.70
11964	B. Walker, South Monmouth, Me	do	1866 and 1868	5.94
	do	do	1868 and 1870	2.46
	do	do	1870	1.91
11965	L. W. Witherell, South Monmouth, Me	do	1871 and 1872	3.67
11966	B. F. Coburn, South Molumcus, Me	do	1868 and 1870	6.64
11967	W. S. Pottle, South Montville, Me	do	1868	1.94
	do	do	1870 and 1872	14.24
11968	John F. Hussey, South Newburgh, Me	do	1866 and 1868	21.88
11969	H. C. Powers, South Norridgewock, Me	do	1870 and 1872	72.20
11970	L. Wheelden, South Orrington, Me	do	1866 and 1868	25.44
11971	M. E. Beal, Southport, Me	do	do	20.80
	do	do	1870 and 1872	77.42
11972	M. Gilman, jr., South Sangerville, Me	do	do	33.24
	do	do	1872 and 1874	25.26
	do	do	1866 and 1868	8.82
11973	J. H. Moulton, South Sandford, Me	do	do	6.76
11974	S. O. Proctor, South Sebec	do	1866 and 1867	22.15
11975	Hiram Blood, South Sebec, Me	do	1867 and 1868	36.93
11976	John Elliott, South Sebec, Me	do	1870 and 1872	9.78
	do	do	1872 and 1874	25.38
11977	Geo. W. Sweet, South Windham, Me	do	1870 and 1872	74.24
11978	Wm. S. Phillips, South Winn, Me	do	1866 and 1868	7.02
	do	do	1868 and 1870	4.28
11979	A. D. Clark, Springfield, Me	do	1866 and 1868	122.42
	do	do	1868 and 1870	66.70
11980	Wm. Wingate, Steep Falls, Me	do	1866 and 1868	15.52
11981	Geo. Wilson, Stevens Plains, Me	do	1868 and 1870	68.56
11982	Samuel Hill, Sullivan, Me	do	do	23.94
11983	Sol. Bisbee, Sumner, Me	do	1866 and 1867	3.66
11984	John M. Merrill, Surry, Me	do	1866 and 1868	35.80
	do	do	1870 and 1872	42.76
11985	T. R. Nickerson, Swanville, Me	do	1868 and 1870	10.24
11986	B. Webber, Sweden, Me	do	1866 and 1868	19.98
	do	do	1870 and 1872	20.98
	do	do	1872 and 1874	8.26
11987	J. S. Spaulding, The Forks, Me	do	1866 and 1867	21.17
11988	A. D. Murray, The Forks, Me	do	1866 and 1868	12.70
11989	M. M. Parker, Tenant's Harbor, Me	do	1872 and 1874	15.70
	do	do	1870 and 1872	42.70
	do	do	1866 and 1868	46.82
11990	Chas. Whitney, Thorndike, Me	do	do	28.13
11991	O. J. Farwell, Thorndike, Me	do	1868 and 1870	26.60
	do	do	1870 and 1872	22.24
	do	do	1872 and 1874	49.80
11992	B. Hodgkins, Trenton Point, Me	do	1866 and 1868	6.46
	do	do	1868 and 1870	4.38
11993	J. G. Piper, Troy, Me	do	1866 and 1867	21.64
11994	Thomas Conner, Troy, Me	do	1867 and 1868	19.56
11995	H. Bradford, Turner, Me	do	1866 and 1868	128.28
11996	C. R. Tabor, Unity, Me	do	1887 and 1868	27.94
11997	T. R. White, Union, Me	do	1866 and 1868	99.27
11998	B. Burton, Union, Me	do	1868 and 1870	75.00
11999	J. R. Tabor, Union, Me	do	1866 and 1867	40.87

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
11897	A. A. Gould, North Windham, Me	Compensation of postmasters readjusted, etc.	1872	$5.96
11898	G. W. Fuller, North Woodstock, Me	do	1868 and 1869	10.16
11899	S. S. Stanwood, North Yarmouth, Me	do	1866 and 1868	28.88
	do	do	1868 and 1870	18.56
	do	do	1872 and 1874	56.64
11900	Wm. Reed, Number Eleven, Me	do	1866 and 1867	3.58
11901	S. Kilborn, Oak Hill, Me	do	do	33.45
11902	A. W. Warren, Orneville, Me	do	1866 and 1868	15.78
11903	Wm. H. Sprague, Orient, Me	do	1866 and 1867	11.27
11904	O. B. Trott, Orland, Me	do	1866 and 1868	90.54
11905	B. M. Foss, Orono, Me	do	1867 and 1868	97.80
11906	Geo. Duly, Parker's Head, Me	do	1866 and 1868	55.70
11907	L. S. Genther, Parkman, Me	do	1866 and 1867	8.89
11908	Chas. T. Seabury, Parkman, Me	do	1873 and 1874	22.07
11909	Jno. Morrill, Parsonfield, Me	do	1868 and 1870	11.00
11910	Wm. Leonard, Passadumkeag, Me	do	1866 and 1868	16.20
11911	Wm. P. Ford, Pemaquid, Me	do	do	31.24
11912	Geo. K. Hatch, Pembroke, Me	do	1867 and 1868	80.30
11913	S. W. Perkins, Penobscot, Me	do	1866 and 1880	72.46
	do	do	1870 and 1872	34.50
11914	J. Green, Peru, Me	do	1866 and 1867	15.03
11915	E. S. Wyman, Peru, Me	do	1868	5.01
	do	do	1870 and 1872	13.52
11916	Jas. L. Tuell, Plantation No. 14, Me	do	1868 and 1870	2.84
	do	do	1870 and 1872	.94
	do	do	1872 and 1874	1.26
11917	Daniel Stone, Plymouth, Me	do	1866 and 1868	95.54
11918	E. Blazo, Porter, Me	do	do	24.12
	do	do	1868 and 1870	20.86
	do	do	1870 and 1872	15.46
11919	S. M. Pratt, Pratt's Corners, Me	do	1866 and 1868	37.80
	do	do	1868 and 1870	49.62
	do	do	1870 and 1871	24.45
11920	H. T. Kimball, Rangeley, Me	do	1867 and 1868	20.73
11921	C. H. Newton, Red Beach, Me	do	1866 and 1868	38.34
	do	do	1868 and 1870	46.74
	do	do	1872 and 1874	19.02
11922	W. H. Smith, Richmond Corner, Me	do	1866 and 1868	37.80
	do	do	1868 and 1870	41.66
	do	do	1872 and 1874	54.60
11923	S. A. Todd, Ripley, Me	do	1866 and 1868	16.06
	do	do	1868 and 1870	10.66
	do	do	1870 and 1872	7.70
11924	Rufus Gates, Robbinston, Me	do	1866 and 1868	84.28
	do	do	1868 and 1869	25.39
11925	T. B. Vose, Robbinston, Me	do	1869 and 1870	32.37
11926	H. T. Knowles, Rockabeama, Me	do	1868 and 1870	93.80
	do	do	1870 and 1872	4.96
11927	Austin Sweetland, Rockport, Me	do	do	86.16
11928	L. W. Leighton, Ross Corner, Me	do	do	14.32
11929	Wm. V. Porter, Roxbury, Me	do	1866 and 1868	1.43
11930	S. M. Locke, Roxbury, Me	do	1869 and 1870	1.75
	do	do	1870 and 1872	6.12
	do	do	1872 and 1874	24.78
11931	C. W. Kimball, Rumford Point, Me	do	1866 and 1868	124.92
	do	do	1868 and 1870	61.62
11932	James M. Webb, Saccarappa, Me	do	1868	30.57
11933	John C. Stowers, Sandy Point, Me	do	1870 and 1872	45.61
11934	O. B. Williams, Sangerville, Me	do	1866 and 1868	44.24
	do	do	1868 and 1870	30.16
11935	R. Wilde, Salmon Brook, Me	do	1866 and 1868	10.10
	do	do	1870 and 1872	4.94
	do	do	1872 and 1873	7.72
11936	C. Whitaker, Searamont, Me	do	1868 and 1870	31.32
11937	P. B. Young, Sebago, Me	do	1866 and 1867	6.88
11938	Lem. Milliken, Scarborough, Me	do	1868 and 1870	36.90
11939	J. M. Hall, Shapleigh, Me	do	1866 and 1868	78.54
11940	T. Trafton, Sherman, Me	do	do	23.92
11941	S. Robinson, Sherman Mills, Me	do	do	36.84
	do	do	1868 and 1870	19.80
11942	F. A. Simpson, Simpson's Corner, Me	do	1866 and 1868	9.52
11943	O. Stockton, Six Mile Falls, Me	do	1872 and 1874	7.20
11944	C. O. Lowell, Small Point, Me	do	1869 and 1870	5.17
11945	E. Totman, Small Point, Me	do	1872 and 1874	14.06
11946	J. H. Pattee, Smithfield, Me	do	1866 and 1867	32.98
11947	A. Sawyer, Smithfield, Me	do	1867 and 1868	17.85
11948	T. C. S. Berry, Smyrna, Me	do	1866 and 1868	11.22
11949	F. Ham, Smyrna Mills, Me	do	do	9.74
	do	do	1868 and 1870	10.38

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12048	Wm. M. Flynn, Whitneyville, Me	Compensation of postmasters readjusted, etc.	1869 and 1870	$17.16
12049	A. B. Chase, Winn, Me	do	1868 and 1870	36.38
	do	do	1870 and 1872	85.96
12050	I. W. Andrews, Woodstock, Me	do	1866 and 1868	11.42
	do	do	1868 and 1870	5.72
12051	Saml. H. Chesley, Woodville, Me	do	1866 and 1868	4.68
12052	B. D. Farnham, Woolwich, Me	do	1871 and 1872	54.55
12053	Albert Fooks, Aberdeen, Md	do	1869 and 1870	28.33
12054	J. T. Colton, Allen's Fresh, Md	do	1866 and 1868	54.64
12055	Alphonso Latchford, Annapolis Junction, Md.	do	1872 and 1874	144.64
12056	Isaac Wilson, Bakersville, Md	do	do	19.20
12057	John W. Brown, Barnesville, Md	do	1866 and 1868	36.86
	do	do	do	11.54
	do	do	1870 and 1872	20.56
12058	Basil De Laschmitt, Barry, Md	do	1871 and 1872	24.57
12059	Joseph T. Reed, Bay View, Md	do	1866 and 1868	19.18
12060	Philip A. Sassoer, Beantown, Md	do	1870 and 1872	8.52
	do	do	1872 and 1874	41.72
12061	Milton Witmer, Beaver Creek, Md	do	1866 and 1868	28.26
12062	John Waggaman, Beaver Creek, Md	do	1870 and 1872	22.08
12063	John T. Spicer, Bel Air, Md	do	1870	36.45
12064	John Semms, Bellsville, Md	do	1866 and 1868	171.52
	do	do	1868 and 1870	140.90
	do	do	1870 and 1872	304.92
	do	do	1872 and 1874	241.14
12065	Geo. W. Morin, Benevola, Md	do	1868 and 1870	11.62
	do	do	1870 and 1872	8.14
12066	Geo. A. Parker, Berlin, Md	do	1866	9.20
12067	Isaac W. Davis, Bethlehem, Md	do	1870 and 1872	13.00
12068	Samuel Bingham, Bird's Hill, Md	do	1867 and 1868	3.51
	do	do	1870 and 1872	9.40
12069	Thos. Henderson, Black Horse, Md	do	1866 and 1868	10.88
	do	do	1868 and 1870	45.60
12070	Daniel Milhelm, Black Rock, Md	do	1866 and 1868	12.76
12071	Eliza R. Beard, Boonsborough, Md	do	do	70.38
12072	Thos. J. Warfield, Breathedsville, Md	do	1868 and 1870	11.10
12073	Henry C. Wilt, Bridgeport, Md	do	1866 and 1868	12.05
12074	Christian Correll, Bridgeport, Md	do	1868	.55
	do	do	1870 and 1870	11.96
	do	do	1872 and 1874	4.46
12075	Thos. B. Eareckson, Broad Creek, Md	do	1866 and 1868	47.04
	do	do	1868 and 1870	20.42
12076	J. Walter Carpenter, Budd's Creek, Md	do	1871 and 1872	6.00
12077	John D. C. Duncan, Butler, Md	do	1866 and 1868	22.00
12078	John P. Benson, Butler, Md	do	1868 and 1870	18.02
12079	Geo. I. Brown, Cavetown, Md	do	1866 and 1868	30.14
	do	do	1868 and 1869	7.97
12080	Mary E. Brown, Cherry Hill, Md	do	1866 and 1868	38.68
	do	do	1868 and 1870	25.70
	do	do	1872 and 1874	33.46
12081	F. B. Hanson, Churchville, Md	do	1866 and 1868	54.20
12082	Philip G. Hawkins, Churchville, Md	do	1872 and 1874	56.30
12083	Mary L. Power, Clarksburgh, Md	do	1866 and 1868	71.00
	do	do	1872 and 1873	13.28
12084	Mrs. Annie Newcomer, Clear Spring, Md.	do	1866 and 1867	73.58
12085	John Sesey, Clear Spring, Md	do	1867 and 1868	92.26
12086	Richard Hardesty, Collington, Md	do	1866 and 1868	40.14
12087	Caleb Sheetz, Cooksville, Md	do	1870	4.62
12088	John H. Feidt, Conococheague, Md	do	1871 and 1872	4.30
12089	Samuel Corner, Cornersville, Md	do	1866 and 1868	19.79
	do	do	1872 and 1874	28.40
12090	John B. Kunkel, Cotoctyn Furnace, Md.	do	1871 and 1872	10.60
12091	T. A. Smith, Cross Roads, Md	do	1870 and 1872	24.30
	do	do	1872 and 1874	24.44
12092	Edward A. Owens, Crownsville, Md	do	1866 and 1868	21.04
12093	Philemon M. Smith, jr., Damascus, Md.	do	do	7.18
	do	do	1868 and 1870	6.40
	do	do	1870 and 1872	15.00
12094	P. W. Silver, Darlington, Md	do	1866 and 1868	77.38
	do	do	1868 and 1869	25.65
12095	Emily D. Parkinson, Dames Quarter, Md.	do	1866 and 1867	11.30
12096	Wm. Diffendal, Double Pipe Creek, Md	do	1866 and 1868	29.24
	do	do	1868	4.67
12097	Dan. K. Saylor, Double Pipe Creek, Md.	do	1869 and 1870	10.58
12098	J. H. Lemmon, Dublin, Md	do	1866	2.07
12099	W. H. H. Whiteford, Dublin, Md	do	1866 and 1868	16.94
12100	Philip G. Bagley, Dublin, Md	do	1870 and 1872	30.74
12101	Abdel R. Wents, Dug Hill, Md	do	do	10.96

Estimate for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12000	W. C. Hammond, jr., Van Buren, Me	Compensation of postmasters readjusted, etc.	1870 and 1872	$40.58
12001	Josiah Morrill, Vienna, Me	do	1868 and 1869	14.83
12002	H. Dowst, Vienna, Me	do	1869 and 1870	22.23
	do	do	1870 and 1872	31.46
12003	A. J. Stockwell, Veazie, Me	do	1866 and 1868	84.96
	do	do	1868 and 1870	55.28
	do	do	1870 and 1872	44.19
12004	A. Smith, Walton Mills, Me	do	1866 and 1868	18.04
12005	J. M. Studley, Warren, Me	do	1869 and 1870	25.03
12006	L. A. Law, Washington, Me	do	1866 and 1868	56.36
	do	do	1872 and 1873	8.31
12007	E. G. Webber, Washington, Me	do	1873 and 1874	13.86
12008	Jas. Leavitt, Waterborough Centre, Me.	do	1866 and 1868	58.76
12009	Jos. C. Roberts, Waterborough Centre, Me.	do	1870	3.82
12010	Jas. Leavitt, Waterborough Centre, Me.	do	1868 and 1869	19.11
12011	Jos. C. Roberts, Waterborough Centre Me.	do	1872 and 1874	23.56
12012	Alfred Sawyer, Wayne, Me	do	1866 and 1868	126.70
	do	do	1868 and 1870	44.54
12013	Elmer Brown, Webb's Mills, Me	do	1867 and 1868	9.05
12014	Sam'l Cushman, Webster, Me	do	1868 and 1869	9.45
12015	B. D. Libby, Wellington, Me	do	1868 and 1870	7.52
	do	do	1870 and 1872	25.68
	do	do	1872 and 1874	15.00
12016	Geo. W. Averill, Wesley, Me	do	1866 and 1867	24.86
12017	C. C. Rollins, Wesley, Me	do	1868	4.97
	do	do	do	1.91
12018	A. J. Drew, Wesley, Me	do	1868 and 1870	13.37
12019	C. Megquier, Weston, Me	do	1870 and 1872	33.86
	do	do	1872 and 1874	5.10
12020	H. M. Packard, West Auburn, Me	do	1866 and 1868	33.88
	do	do	1868 and 1870	54.12
	do	do	1870 and 1871	17.72
12021	Jno. M. Perry, West Auburn, Me	do	1872	8.84
	do	do	1872 and 1874	78.92
12022	M. Holt, West Bethel, Me	do	1866 and 1868	29.82
	do	do	1868 and 1870	38.48
12023	Sam'l M. Sawyer, West Bridgewater, Me.	do	1867 and 1868	5.76
	do	do	1872 and 1874	6.12
12024	J. C. Purrington, West Bowdoin, Me	do	1866 and 1868	7.96
12025	L. F. Tapley, West Brookville, Me	do	1868 and 1870	26.84
	do	do	1870 and 1872	18.72
12026	A. K. P. Lord, West Buxton, Me	do	1866 and 1868	42.50
12027	M. S. Leach, West Camden, Me	do	do	70.58
12028	I. Lincoln, West Corrinna, Me	do	do	7.58
	do	do	1868 and 1870	1.24
	do	do	1870 and 1872	7.64
	do	do	1872	.59
12029	Stephen Lincoln, West Corrinna, Me	do	1872 and 1874	4.16
12030	N. Jones, West Enfield, Me	do	1868 and 1870	6.46
	do	do	1870 and 1872	4.82
	do	do	1872 and 1874	4.08
12031	D. F. Small, West Falmouth, Me	do	1866 and 1868	11.98
	do	do	1870 and 1872	19.70
12032	J. B. Miller, West Hampden, Me	do	1866 and 1868	15.45
12033	I. C. York, West Hampden, Me	do	1868	1.31
12034	L. F. Webber, West Harpswell, Me	do	1868 and 1870	28.48
	do	do	1870 and 1871	9.29
12035	E. Thomas, West Harpswell, Me	do	1872	6.19
12036	M. M. Thomas, West Harpswell, Me	do	1873	9.29
12037	A. Bowden, West Mills, Me	do	1868 and 1870	29.64
12038	T. A. Young, West Paris, Me	do	1866 and 1868	96.90
12039	A. Richardson, West Pittsfield, Me	do	do	17.70
12040	Geo. P. Garfield, West Pittsfield, Me	do	1870 and 1872	11.78
	do	do	1872 and 1874	8.36
12041	S. P. Webber, Westport, Me	do	1870 and 1872	11.72
12042	D. J. Lawrence, West Pownal, Me	do	1866 and 1868	40.14
	do	do	1872 and 1874	20.72
12043	K. K. Thompson, West Trenton, Me	do	1868 and 1870	20.74
	do	do	1870 and 1872	14.36
	do	do	1872 and 1874	20.50
12044	James Libby, West Troy, Me	do	1869 and 1870	23.35
	do	do	1870 and 1872	5.64
	do	do	1872 and 1874	18.48
12045	O. Newhall, West Washington, Me	do	1866 and 1867	22.90
	do	do	1868 and 1870	20.30
12046	D. Wescott, White Rock, Me	do	1866 and 1868	14.34
12047	Jane Crane, Whiting, Me	do	do	12.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12147	E. A. Long, Kingston, Md	Compensation of postmasters readjusted, etc.	1866 and 1867	$3.57
12148	Jacob M. Birely, Ladiesburgh, Md	do	1866 and 1868	18.02
12149	Chas. Lake, Lakesville, Md	do	do	6.12
	do	do	1870 and 1872	10.36
	do	do	1872 and 1874	5.32
12150	A. J. P. Tabler, Lappan's Cross Roads, Md.	do	1866 and 1868	10.04
	do	do	1868	.34
12151	Wm. Henkell, Lauraville, Md	do	1868 and 1870	17.90
12152	Julia C. Henkell, Lauraville, Md	do	1872 and 1873	9.11
12153	F. L. Bell, Laytonsville, Md	do	1870 and 1872	14.08
12154	James A. Hayes, Leetersburgh, Md	do	1866 and 1868	27.96
12155	N. Conrad, Leonardtown, Md	do	do	79.82
12156	O. T. Zimmerman, Lewistown, Md	do	1866 and 1867	14.60
12157	Peter T. Waltman, Lewistown, Md	do	1867 and 1868	24.32
12158	Joseph D. Green, Lewistown, Md	do	1870 and 1872	18.20
	do	do	1872 and 1874	16.64
12159	James D. Slade, Long Green, Md	do	1866 and 1868	21.90
12160	J. M. B. Dalrymple, Lower Marlborough, Md.	do	1871 and 1872	7.48
	do	do	1872 and 1874	23.08
12161	Sam'l McKinstry, McKinstry Mills, Md.	do	1866 and 1868	12.34
	do	do	1868 and 1870	33.10
	do	do	1870 and 1872	30.98
12162	E. A. Gauter, Manchester, Md	do	do	40.78
12163	Sam'l E. Davis, Marriottsville, Md	do	1871 and 1872	18.45
12164	C. H. Sparks, Masseys Cross Roads, Md	do	1868 and 1870	4.34
12165	Geo. H. Johnson, Mechanicstown, Md	do	1866	7.14
12166	Thos. M. Tyson, Mechanics Valley, Md	do	1872 and 1874	16.14
12167	Wm. Hynson, Mellville, Md	do	1866 and 1867	2.50
12168	Jacob J. Michael, Michaelsville, Md	do	1868 and 1870	19.40
	do	do	1870 and 1872	26.46
	do	do	1872 and 1874	25.66
12169	John T. Buxton, Middle Brook, Md	do	1866 and 1868	26.42
	do	do	1868 and 1870	33.66
	do	do	1870 and 1872	22.98
12170	Richard H. Garner, Milestown, Md	do	1868 and 1870	34.46
	do	do	1870 and 1872	26.98
	do	do	1872	3.38
12171	George Miller, Millersville, Md	do	1866 and 1868	40.70
	do	do	1868 and 1869	16.56
12172	L. Cecil, Millersville, Md	do	1869 and 1870	36.43
	do	do	1870 and 1872	24.26
12173	Albert Hoopes, Mill Green, Md	do	1872 and 1874	4.60
12174	Jacob Myers, Millstone Point, Md	do	1866 and 1868	22.66
	do	do	1870 and 1872	14.30
12175	Frederick O. Sellman, Monocacy, Md	do	1868 and 1870	13.68
	do	do	1870 and 1872	41.16
12176	John W. Ogborn, Mount Pleasant, Md.	do	1869 and 1870	16.06
	do	do	1870 and 1872	26.00
12177	Wm. T. Jones, Muirkirk, Md	do	1868 and 1870	98.58
	do	do	1872 and 1874	119.62
12178	W. H. Higgs, Newburgh, Md	do	1866 and 1868	36.32
	do	do	1870 and 1872	21.14
	do	do	1872 and 1874	33.64
12179	Hamilton Stier, New Market, Md	do	1866 and 1868	127.98
	do	do	1870 and 1872	44.20
12180	John M. Latimer, Newport, Md	do	1868 and 1870	13.46
	do	do	1872 and 1873	4.90
12181	H. C. Luttgerding, North Branch, Md.	do	1870 and 1872	8.48
12182	Mordecai R. Stamp, Nottingham, Md	do	1866 and 1868	25.24
	do	do	1868	5.35
12183	John Gomley, Nottingham, Md	do	1869 and 1870	15.75
	do	do	1870 and 1871	11.09
12184	Mordecai R. Stamp, Nottingham, Md	do	1871 and 1872	11.09
12185	Lewis W. Swift, Oxford, Md	do	1867 and 1868	11.14
12186	Geo. W. L. Buckler, Oakville, Md	do	1868	7.07
	do	do	1868 and 1870	16.40
	do	do	1870 and 1872	15.10
12187	Caleb Douty, Ocean, Md	do	1870	39.28
12188	R. S. Kirk, Olney, Md	do	1866 and 1868	70.40
12189	John O. Gallup, Oxford, Md	do	1866 and 1867	2.99
12190	H. M. Hoffacker, Parkton, Md	do	18 6	13.92
12191	John Myers, Parkton, Md	do	1867 and 1868	23.20
12192	P. H. Griffith, Petersville, Md	do	1868 and 1869	34.21
12193	C. W. Cramer, Petersville, Md	do	1869 and 1870	41.19
	do	do	1870	9.31
	do	do	189 and 1872	62.88
12194	A. Creamer, Petersville, Md	do	1872 and 1873	29.98

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12101	Abdel R. Wents, Dug Hill, Md	Compensation of postmasters readjusted, etc.	1872 and 1874	$10.06
12102	W. W. Sullivan, Dunkirk, Md	do	1866 and 1868	11.96
	do	do	1868 and 1870	21.60
	do	do	1870 and 1872	19.06
	do	do	1872 and 1873	14.62
12103	Nimrod Newton, East New Market, Md	do	1870 and 1872	50.94
	do	do	1873 and 1874	51.87
12104	Richard Hodges, Edesville, Md	do	1866 and 1867	24.93
12105	Geo. H. Pocock, Elk Ridge Landing, Md	do	1866 and 1868	94.70
	do	do	1868 and 1870	24.46
	do	do	1870 and 1872	49.58
12106	Edward Painter, Fallston, Md	do	1866 and 1868	112.12
12107	Jos. G. Painter, Fallston, Md	do	1868 and 1870	39.86
	do	do	1870 and 1872	101.64
	do	do	1872	19.58
12108	Cornelius L. Brokan, Fair Hill, Md	do	1867	6.48
12109	Milton S. Sentman, Fair Hill, Md	do	1868	.88
12110	Philetus Allen, Federalsburgh, Md	do	1874	11.34
12111	Elizabeth Robinson, Federal Hill, Md	do	1870 and 1872	10.08
	do	do	1872 and 1874	3.22
12112	George W. Stockdale, Finksburgh, Md	do	1866	4.88
12113	Stephen B. Stockdale, Finksburgh, Md	do	1866 and 1868	19.92
	do	do	1868	9.44
12114	G. Watkins Warfield, Florence, Md	do	1872	11.12
12115	John B. Roe, Forest Hill, Md	do	1870 and 1872	33.58
	do	do	1872 and 1874	19.34
12116	Henry C. Ward, Forest Oak, Md	do	1870 and 1872	14.46
	do	do	1872 and 1874	21.74
12117	Edward H. Nye, Forestville, Md	do	1870 and 1872	27.50
12118	William Dampman, Fork Meeting House, Md.	do	1868 and 1870	24.88
	do	do	1866 and 1868	16.80
	do	do	1872 and 1874	20.12
12119	J. R. McNash, Fowling Creek, Md	do	1866 and 1868	14.52
	do	do	1870 and 1872	8.02
12120	Jermima H. Waldrow, Freedom, Md	do	1866 and 1868	22.04
	do	do	1868 and 1870	14.22
	do	do	1870 and 1872	11.98
12121	J. A. K. McBride, Frizellburgh, Md	do	1866 and 1867	35.91
12122	L. A. Grosh, Funkstown, Md	do	1866 and 1868	70.06
12123	J. H. Bell, Galestown, Md	do	do	4.42
	do	do	1872 and 1874	8.46
12124	John Gootee, Golden Hill, Md	do	1866 and 1868	22.98
12125	N. C. Dickerson, Goshen, Md	do	1872 and 1874	18.28
12126	Eugene J. Gernard, Graceham, Md	do	1870 and 1872	17.14
	do	do	1872 and 1874	17.04
12127	George H. Hare, Gare Run Mills, Md	do	1866 and 1868	28.30
	do	do	1870 and 1872	3.10
	do	do	1872 and 1874	10.92
12128	Adam Reier, Greenwood, Md	do	1870 and 1872	27.98
	do	do	1872 and 1874	38.90
12129	John W. Murray, Hampstead, Md	do	1866 and 1868	69.62
	do	do	1868 and 1869	12.94
	do	do	1869 and 1870	17.27
12130	A. L. Vannort, Hancsville, Md	do	1866 and 1868	32.12
	do	do	1870 and 1872	43.26
	do	do	1872 and 1874	79.26
12131	A. W. Kimble, Harford Furnace, Md	do	1866	2.60
12132	W. P. Parnell, Harford Furnace, Md	do	1866 and 1868	11.71
12133	Aquilla Bailey, Havre de Grace, Md	do	1869 and 1870	72.44
12134	T. P. Davis, Head of Sassafras, Md	do	1866 and 1868	43.82
12135	G. W. Elliott, Hereford, Md	do	do	30.64
	do	do	1868 and 1870	17.36
12136	Samuel T. Robinson, Hicksburgh, Md	do	1866 and 1868	17.38
12137	Jacob Minnick, Hickory Tavern, Md	do	do	14.76
	do	do	1872 and 1874	13.70
12138	Joseph Feelemyer, Hookstown, Md	do	1868 and 1869	17.63
	do	do	1870 and 1872	310.78
12139	Benj. F. Sellman, Ijamsville, Md	do	do	31.20
12140	Augustus T. Prindle, Tolchester Mills, Md.	do	do	17.16
12141	Robert S. Roach, Indian Springs, Md	do	1866 and 1868	42.84
12142	Benjamin Mason, Jarrettsville, Md	do	do	41.46
	do	do	1870 and 1872	24.60
12143	David Lee, Jerusalem Mills, Md	do	do	20.48
12144	Joseph Etzler, Johnsville, Md	do	1868 and 1869	12.97
12145	Lott Hartsock, Johnsville, Md	do	1869 and 1870	19.04
12146	Ezra Baker, Keedysville, Md	do	1870 and 1872	176.78
	do	do	1872 and 1874	78.36

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12248	Wm. F. Allen, Upper Trappe, Md	Compensation of postmasters readjusted, etc.	1866	$5.91
12249	Columbus W. Windsor, Urbana, Md	do	1866 and 1868	61.34
12250	William H. Todd, Utica Mills, Md	do	do	10.52
	do	do	1870 and 1872	9.46
	do	do	1872 and 1874	37.54
12251	Samuel Keys, Vienna, Md	do	1866 and 1868	31.00
12252	James A. Higgins, Vienna, Md	do	1870 and 1872	30.40
12253	James A. Higgins, Vienna, Md	do	1872 and 1874	29.36
12254	Joseph Hoover, Wakefield, Md	do	1870 and 1872	17.72
	do	do	1872 and 1874	13.14
12255	Samuel H. Green, Warren, Md	do	1869 and 1870	8.30
	do	do	1872 and 1874	19.74
12256	John McKone, Westernport, Md	do	1873 and 1874	109.81
12257	Jos. D. Main, Weverton, Md	do	1866 and 1868	117.50
	do	do	1868 and 1870	44.40
12258	A. Schnebly, Williamsport, Md	do	1867 and 1868	50.46
12259	James Easton, Winfield, Md	do	1870 and 1872	23.44
	do	do	1872 and 1874	8.40
12260	J. H. Mangans, Wolfsville, Md	do	1866 and 1869	46.13
12261	Gideon Bussard, Wolfsville, Md	do	1867 and 1868	19.03
	do	do	1868	5.19
12262	Frederick Leatherman, Wolfsville, Md	do	1868 and 1869	10.38
12263	J. H. Mangans, Wolfsville, Md	do	1871 and 1872	14.97
	do	do	1872 and 1874	33.70
12264	J. W. Abrahams, Woodlawn, Md	do	1866	107.42
12265	Wm. Cleavy, Woodstock, Md	do	1868 and 1870	41.22
12266	John R. Hopkins, Wye Mills, Md	do	do	34.38
	do	do	1872 and 1874	13.49
12267	James L. Curhart, Zion, Md	do	1866 and 1868	20.18
	do	do	1868	6.98
12268	Stephen B. Ford, Zion, Md	do	1869 and 1870	20.94
12269	Lyman Allen, Agawam, Mass	do	1866 and 1868	41.84
12270	Wm. H. B. Currier, Amesbury, Mass	do	1869 and 1870	244.75
12271	F. E. Fowle, Arlington, Mass	do	1870 and 1872	177.26
12272	Albert Le Roy, Ashley Falls, Mass	do	1868 and 1870	152.20
	do	do	1870 and 1872	172.68
	do	do	1872 and 1874	43.46
12273	C. W. Merryfield, Bancroft, Mass	do	1866 and 1868	37.18
	do	do	1868 and 1870	37.68
	do	do	1870 and 1872	39.78
	do	do	1872 and 1874	25.96
12274	Edward Denny, Barre Plains, Mass	do	1870 and 1872	23.26
12275	Chas. O. Perkins, Becket, Mass	do	1866 and 1868	8.94
	do	do	1868 and 1869	3.66
12276	Wm. G. Harding, Berkshire, Mass	do	1870 and 1872	113.10
12277	Isaac F. Day, Beverly Farm, Mass	do	1866 and 1867	68.00
	do	do	1867 and 1868	57.76
	do	do	1868 and 1870	67.74
12278	E. W. Blackinton, Blackinton, Mass	do	do	83.98
	do	do	1872 and 1874	85.04
12279	Lucius B. Shepard, Blanford, Mass	do	1866 and 1868	39.56
	do	do	1868 and 1870	43.79
12280	Ezra G. Moore, Bolton, Mass	do	do	63.26
	do	do	1870 and 1872	50.68
12281	W. G. Todd, Boxford, Mass	do	1866 and 1867	27.37
12282	James A. Weeks, Boylston, Mass	do	1872 and 1874	29.34
12283	Henry White, Boylston Centre, Mass	do	1866 and 1868	52.82
	do	do	1868 and 1870	18.60
12284	C. W. Proctor, Braintree, Mass	do	1869 and 1870	36.75
	do	do	1870 and 1872	50.98
12285	Dennis Hartshorn, Braggville, Mass	do	1866 and 1868	11.52
	do	do	1868 and 1870	22.28
	do	do	1872 and 1874	10.86
12286	Martha B. Huckrus, Brewster, Mass	do	1866 and 1868	63.36
12287	Cyrus W. Ruggles, Brookline, Mass	do	do	288.24
12288	Silas Cutler, Burlington, Mass	do	do	15.86
	do	do	1872 and 1874	9.20
12289	Artemus Parker, Carlisle, Mass	do	1866 and 1867	22.46
12290	Sidney A. Bull, Carlisle, Mass	do	1870 and 1872	41.66
12291	Calvin Fairbanks, Careyville, Mass	do	1868 and 1870	18.86
12292	Eli Southworth, Carver, Mass	do	1866 and 1868	9.36
12293	Pellham W. Barrows, Carver, Mass	do	1870 and 1872	14.53
12294	Wm. M. Richards, Charles River Village, Mass.	do	1866 and 1868	7.56
12295	Reuben Wallin, Charlton, Mass	do	1866 and 1867	21.18
12296	Alfred E. Fiske, Charlton, Mass	do	1867 and 1868	12.70
	do	do	1868 and 1870	22.76
12297	Ziba Nickerson, Chatham, Mass	do	1866 and 1868	123.02
12298	Eli F. Webster, Chelmsford, Mass	do	do	60.50

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12195	John W. Schooley, Point of Rocks, Md.	Compensation of postmasters readjusted, etc.	1868	$51.69
12196	Israel W. Williams, Point of Rocks, Md.	do	1872 and 1873	46.32
	do	do	1869 and 1870	155.06
12197	Wm. Metzger, Poolesville, Md	do	1866 and 1868	98.84
12198	Henry D. Powell, Powellsville, Md.	do	do	8.50
12199	Jeremiah B. Fletcher, Preston, Md	do	do	30.38
12200	Henry Crawford, Quantico, Md	do	1872	7.36
	do	do	1870 and 1872	21.34
12201	Nicholson Vansant, Reistertown, Md	do	1866 and 1868	58.12
12202	Benj. P. Gravener, Riverton, Md	do	1868 and 1870	8.12
	do	do	1870 and 1872	9.58
	do	do	1872 and 1874	14.92
12203	S. A. J. Wickes, Rock Hall, Md	do	1867 and 1868	30.79
	do	do	1870 and 1872	58.92
12204	J. E. Rohrer, Rohrersville, Md	do	1866 and 1868	38.94
12205	Joseph C. Ward, Rohrersville, Md	do	1870 and 1872	22.20
12206	Mordecai Price, Roesville, Md	do	1866 and 1868	14.04
	do	do	1868 and 1869	3.01
12207	George Brandenburg, Roxbury Mills, Md	do	1870 and 1872	21.48
12208	R. C. Lane, Royal Oak, Md	do	1866 and 1868	31.66
12209	Edward T. Benson, Royal Oak, Md	do	1869 and 1870	13.53
12210	John T. Beard, Rutland, Md	do	1866 and 1868	9.68
	do	do	1870 and 1872	22.90
12211	Martin Myers, Sabillasville, Md	do	1866 and 1868	47.14
12212	David Crawford, Sabillasville, Md	do	1870 and 1872	23.32
	do	do	1872 and 1874	20.17
12213	Wm. A. Twitley, Salem, Md	do	1871 and 1872	5.15
12214	David E. Stein, Sam's Creek, Md	do	1870 and 1872	27.35
	do	do	1869 and 1870	5.25
12215	Edward Stabler, Sandy Springs, Md	do	1866 and 1868	104.56
12216	Charles Hitesbew, Smithsburgh, Md	do	do	75.10
12217	Wm. F. Leach, Saint Clement's Bay, Md.	do	1873	2.84
12218	John Crookshank, Saint Inigoes, Md	do	1866 and 1868	176.93
12219	Emma T. Bean, Saint Inigoes, Md	do	1868	25.28
	do	do	1868 and 1869	24.14
12220	J. F. Smith, Saint Inigoes, Md	do	1870 and 1872	74.18
	do	do	1872 and 1873	70.05
12221	James H. Frazier, Saint Leonard's, Md.	do	1872 and 1874	6.18
12222	H. C. Dodson, Saint Michael's, Md	do	1866 and 1868	90.56
	do	do	1868 and 1870	71.48
	do	do	1870 and 1872	80.06
12223	Thomas C. Boone, Saint Margaret, Md	do	do	33.44
	do	do	1872 and 1874	8.55
12224	Samuel Mamsten, Savage, Md	do	1868 and 1869	31.22
12225	Hiram M. Frazee, Selbysport, Md	do	1868 and 1870	10.60
	do	do	1870 and 1871	16.10
12226	F. A. Roop, Sharpstown, Md	do	1868 and 1869	4.53
12227	G. W. Weaver, Silver Run, Md	do	1866	1.65
11228	Ezra T. Hahn, Silver Run, Md	do	1867 and 1868	8.24
	do	do	1870	2.51
12229	John A. Catrup, Skipton, Md	do	1872 and 1874	5.46
12230	Wm. H. Spencer, Spencerville, Md	do	1866 and 1868	12.37
	do	do	1870 and 1872	3.42
12231	Levin J. Houston, Stockton, Md	do	1871 and 1872	29.79
12232	N. D. Wilkinson, Sundorlandville, Md	do	1872 and 1874	26.66
12233	George A. Hall, Sudlersville, Md	do	1866 and 1868	26.70
	do	do	1868 and 1869	10.45
12234	Elwood B. Peirce, Sudlersville, Md	do	1872	4.52
12235	E. A. Weakley, Sweet Air, Md	do	1866 and 1868	39.12
	do	do	1872 and 1874	9.92
12236	Jacob M. Zimmerman, Sykesville, Md	do	1870 and 1872	64.74
12237	David Reindollor, Taneytown, Md	do	1866	12.95
12238	Barnes Wright, Taneytown, Md	do	1866 and 1868	49.39
12239	Joseph Santman, Tilghmanton, Md	do	1866 and 1868	34.00
	do	do	1870 and 1872	6.90
12240	Thos. J. Bromwell, Tobacco Stick, Md	do	1866 and 1868	17.82
	do	do	1870 and 1871	7.40
12241	James Sheridan, Towsontown, Md	do	1866	11.31
12242	Chas. E. Adams, Trappe, Md	do	1866 and 1868	60.10
	do	do	1868	4.85
12243	J. A. Lechlider, Triadelphia, Md	do	1868 and 1870	15.92
	do	do	1870 and 1872	6.36
	do	do	1872 and 1873	7.33
12244	Peter Lagenbeel, Unionville, Md	do	1866	6.24
	do	do	1872 and 1874	13.84
12245	Silas W. Davis, Unity, Md	do	1868 and 1869	10.11
12246	T. B. Bateman, Upper Falls, Md	do	1866 and 1868	45.42
12247	E. J. K. Scott, Upper Marlborough, Md	do	do	308.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12345	Charles Goodrich, Glendale, Mass	Compensation of postmasters readjusted, etc.	1870 and 1872	$30.88
12346	Philo Chapin, Granby, Mass	do	1872 and 1874	41.80
12347	Ira Haskell, Greenwich Village, Mass	do	1866 and 1867	38.46
12348	Chas. M. Oliver, Greenwood, Mass	do	1869 and 1870	17.43
12349	Isaac F. Eaton, Greenwood, Mass	do	1868	8.71
12350	Chas. M. Oliver, Greenwood, Mass	do	1872 and 1873	8.35
12351	Austin A. Whipple, Hamilton, Mass	do	1870 and 1872	178.86
	do	do	1872 and 1873	41.28
12352	Robt. S. Curtis, Hanover, Mass	do	1866 and 1868	46.00
12353	Albert E. Knight, Hardwick, Mass	do	do	80.86
	do	do	1868 and 1870	60.90
	do	do	1870 and 1872	35.58
12354	Wm. H. Underwood, Harwich, Mass	do	1866 and 1868	61.26
12355	Edwin Scott, Hawley, Mass	do	do	17.36
	do	do	1868 and 1870	14.52
12356	Horace McGee, Heath, Mass	do	do	42.18
12357	Stephen A. Knight, Hebronville, Mass	do	1866 and 1867	28.35
12358	Francis E. Kinney, Holland, Mass	do	1870 and 1872	21.70
12359	John A. Fitch, Hopkinton, Mass	do	1866 and 1868	174.78
12360	Lyman Woodward, Hubbardston, Mass	do	1868 and 1870	91.36
12361	Samuel T. Lyman, Huntington, Mass	do	1866 and 1868	192.50
12362	Silas P. Blodgett, Hyde Park, Mass	do	1873 and 1874	175.43
12363	Calvin J. Eaton, Indian Orchard, Mass	do	1868 and 1870	85.74
	do	do	1870 and 1872	87.54
	do	do	1872 and 1874	84.70
12364	J. L. Ackerman, Ipswich, Mass	do	1866 and 1867	139.59
12365	John H. Coggswell, Ipswich, Mass	do	1868	46.53
12366	Chester Croffs, Ireland, Mass	do	1866 and 1868	24.60
	do	do	1868 and 1870	8.84
12367	Silas Poole, Jamaica, Mass	do	1870	42.88
12368	W. K. Churchill, Joppa Village, Mass	do	1868 and 1870	65.94
	do	do	1870 and 1872	61.92
	do	do	1872 and 1874	64.96
12369	Cephas Hoskins, Lakeville, Mass	do	1868 and 1870	31.70
12370	Leonard G. Babcock, Lexington, Mass	do	do	160.14
12371	Nancy J. Vining, Leyden, Mass	do	1872 and 1874	12.66
12372	A. K. Haskell, Lock's Village, Mass	do	1870 and 1872	13.62
12373	John Manter, jr., Long Plain, Mass	do	1868 and 1870	19.64
	do	do	1870 and 1872	40.18
12374	Eli M. Smith, Ludlow, Mass	do	do	93.48
12375	Daniel Putnam, Lunenburg, Mass	do	1866 and 1868	97.18
12376	Nancy J. Vining, Leyden, Mass	do	1868 and 1870	22.64
	do	do	1870 and 1872	35.80
12377	Jonathan Bryant, Lynnfield Centre, Mass.	do	1866 and 1868	17.78
12378	Henry W. Swasey, Lynnfield, Mass	do	do	44.02
12379	Knott V. Martin, Marblehead, Mass	do	1870 and 1872	1,209.72
12380	Elizabeth Fisher, Mattapan, Mass	do	1866 and 1868	30.27
12381	Wm. Metcalf, Manchaug, Mass	do	do	27.42
12382	Amos Batchelder, Middleton, Mass	do	do	67.16
12383	Andrew L. Finkham, Middleborough, Mass.	do	1868 and 1870	305.00
12384	Lyman E. Moore, Millington, Mass	do	1866 and 1868	14.50
12385	John S. Wolf, Mill River, Mass	do	1868 and 1870	84.57
12386	Elind Taylor, Mill River, Mass	do	1870	12.09
	do	do	1870 and 1872	120.12
	do	do	1872 and 1874	71.41
12387	P. S. Thayer, Millville, Mass	do	1872 and 1873	49.31
12388	Stillman Whitcomb, Monroe, Mass	do	1866 and 1868	3.38
12389	Daniel Wilder, Montague Centre, Mass	do	1871 and 1872	29.29
12390	Henry S. Stiles, Montgomery, Mass	do	1868	2.40
	do	do	1868 and 1870	16.24
	do	do	1870 and 1872	21.60
	do	do	1872 and 1874	17.70
12391	Andrew Whitney, Nantucket, Mass	do	1866 and 1868	368.66
12392	O. S. Hutchinson, New Lennox, Mass	do	1870 and 1872	21.62
	do	do	1872 and 1873	14.46
12393	C. A. Merriam, New Salem, Mass	do	1868	11.48
12394	Frederick A. Haskell, New Salem, Mass	do	1869 and 1870	22.95
12395	Wm. R. Dimond, Newton Lower Falls, Mass.	do	1872 and 1874	82.92
12396	Hosea C. Hoyt, Newton Upper Falls, Mass.	do	1866	20.20
12397	J. H. Grant, Newton Upper Falls, Mass	do	1866 and 1868	141.40
12398	Sheldon W. Wright, New Marlborough, Mass.	do	do	107.56
12399	E. N. Paine, North Blackstone, Mass	do	do	60.96
	do	do	1868	.14
12400	L. F. Smith, Northbridge, Mass	do	1866 and 1868	45.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12299	George A. Parkhurst, Chelmsford, Mass.	Compensation of postmasters readjusted, etc.	1872 and 1874	$50.78
12300	George H. Sweetzer, Cliftondale, Mass.	do	1866 and 1868	52.08
	do	do	1868 and 1870	25.12
	do	do	1872	14.38
12301	Albert Stacy, Concord, Mass.	do	1866 and 1868	150.45
12302	Curtis Woods, Cordaville, Mass.	do	do	186.66
12303	Ethan Clark, Cummington West Village, Mass.	do	1866 and 1867	19.62
12304	Charles Harlow, Cummington West Village, Mass.	do	1867 and 1868	11.77
12305	Henry W. Burrall, Curtisville, Mass.	do	1868 and 1870	19.28
	do	do	1870 and 1872	17.12
12306	Thomas G. Carson, Dalton, Mass.	do	1868 and 1870	151.84
	do	do	1866 and 1868	160.00
	do	do	1870 and 1872	164.58
12307	Wm. H. Balcom, Dana, Mass.	do	1872 and 1874	29.00
12308	F. A. Wilkins, Danvers Centre, Mass.	do	1870 and 1872	99.00
12309	Charles T. Smith, Dartmouth, Mass.	do	1866	15.74
12310	Francis W. Mason, Dartmouth, Mass.	do	1867 and 1868	47.29
	do	do	1868 and 1870	101.46
12311	Robert Vose, jr., Dorchester, Mass.	do	1866 and 1868	99.04
12312	James H. Wilson, Dracut, Mass.	do	do	134.42
	do	do	1868 and 1870	81.16
	do	do	1870 and 1872	17.10
	do	do	1872 and 1874	36.38
12313	James M. Underwood, East Abington, Mass.	do	1866 and 1868	168.76
12314	C. Varney, East Brimfield, Mass.	do	1870 and 1872	14.00
	do	do	1872 and 1874	71.24
12315	George Forbes, East Brookfield, Mass.	do	1866 and 1868	73.10
	do	do	1870 and 1872	117.34
	do	do	1872 and 1874	65.74
12316	N. K. Noble, East Cambridge, Mass.	do	1866 and 1868	673.44
12317	Ruel Washburn, East Freetown, Mass.	do	1870 and 1872	31.42
	do	do	1872 and 1874	27.90
12318	Ralph S. Brown, East Granville, Mass.	do	1866 and 1868	47.88
	do	do	1868 and 1870	29.92
12319	Chas. H. Vaille, East Granville, Mass.	do	1870	4.27
	do	do	1870 and 1871	20.79
12320	Ralph S. Brown, East Granville, Mass.	do	1871 and 1872	12.47
12321	Joshua H. Chase, East Harwich, Mass.	do	1866 and 1868	57.20
12322	Hiram C. Nickerson, East Harwich, Mass.	do	1870 and 1872	18.54
12323	John B. Nichols, East Haverhill, Mass.	do	1866	18.11
12324	Wm. P. Hamblin, East Lee, Mass.	do	1868 and 1870	28.00
	do	do	1872 and 1874	19.12
12325	A. L. Damon, East Marshfield, Mass.	do	1866 and 1868	47.94
12326	Lot Higgins, East Orleans, Mass.	do	do	46.32
	do	do	1868 and 1870	54.08
	do	do	1870 and 1872	71.36
12327	Lavinia A. Hatch, East Pembroke, Mass.	do	1870 and 1871	16.00
12328	John T. Southworth, East Randolph, Mass.	do	1870 and 1872	80.60
12329	Cyrus Dearborn, East Salisbury, Mass.	do	1866 and 1868	23.92
	do	do	1870	1.97
12330	Warren Cobb, East Sharon, Mass.	do	1866 and 1868	7.20
	do	do	1868 and 1870	7.04
	do	do	1870 and 1872	3.32
	do	do	1872 and 1873	2.03
12331	Roscoe C. Taft, East Sheffield, Mass.	do	1868	5.96
12332	Henry M. Fisk, East Shelburne, Mass.	do	1868 and 1870	13.66
	do	do	1872 and 1874	4.30
	do	do	1870 and 1872	4.92
12333	Nathan Blanchard, East Stoughton, Mass.	do	1866 and 1868	105.00
12334	Henry Loud, East Weymouth, Mass.	do	do	211.24
12335	Reuben Pierce, East Windsor, Mass.	do	1870 and 1872	23.08
	do	do	1872 and 1874	21.52
12336	J. L. Wilson, Enfield, Mass.	do	1866 and 1867	42.91
12337	G. E. Walker, Enfield, Mass.	do	1867 and 1868	71.50
12338	Noah Rankin, Erving, Mass.	do	1866 and 1868	43.58
12339	C. W. Proctor, Essex, Mass.	do	do	95.26
12340	Alfred Morse, Farmersville, Mass.	do	do	29.28
12341	James A. Morse, Farmersville, Mass.	do	1870 and 1872	25.48
12342	Nathan White, Florida, Mass.	do	do	19.64
	do	do	1872 and 1874	5.62
12343	Smith Fisher, Franklin, Mass.	do	1866 and 1868	117.58
12344	Joshua Shove, Freetown, Mass.	do	do	46.92
12345	Charles Goodrich, Glendale, Mass.	do	1869 and 1870	35.38

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12435	John P. Cheever, Plainville, Mass	Compensation of postmasters readjusted, etc.	1870 and 1872	$23.66
	do	do	1872 and 1873	45.78
12436	Asa Raymond, Pocasset, Mass	do	1866 and 1868	40.66
12437	Alphonso Brooks, Princeton, Mass	do	1866	1.17
12438	George L. Gill, Quincy, Mass	do	do	81.57
12430	John B. Bass, Quincy, Mass	do	1866 and 1868	406.51
12440	Richard A. Leonard, Raynham, Mass	do	do	46.66
12441	L. E. Gleason, Reading, Mass	do	1872 and 1874	190.40
12442	John C. Marvel, Rehoboth, Mass	do	1866 and 1868	74.84
	do	do	1868 and 1870	10.78
12443	Wm. D. Sanderson, Ringville, Mass	do	do	83.58
	do	do	1866 and 1868	23.72
	do	do	1872 and 1874	21.02
12444	John Ballou, Rowe, Mass	do	1866 and 1868	20.44
12445	Edward Wright, Rowe, Mass	do	1868	2.92
	do	do	1870 and 1872	56.80
12446	Henry C. Nye, Rochester, Mass	do	do	47.44
12447	Thos. B. Cressey, Rowley, Mass	do	1866 and 1868	58.24
12448	J. Scott Todd, Rowley, Mass	do	1870 and 1872	40.48
	do	do	1872 and 1874	78.96
12449	Alonzo Davis, Rutland, Mass	do	1866 and 1868	57.92
12450	Gilbert C. Taft, Saundersville, Mass	do	1868 and 1870	55.58
	do	do	1870 and 1872	50.46
	do	do	1872 and 1874	24.30
12451	Calvin Bowker, Savoy, Mass	do	1870 and 1872	43.28
12452	Julian D. Lawrence, Sangus Centre, Mass	do	1866 and 1868	133.56
12453	Calvin Bowker, Savoy, Mass	do	1872 and 1874	58.30
12454	Andrew N. Medbery, Seekonk, Mass	do	do	11.16
12455	C. W. Shattuck, Shattuckville, Mass	do	1870 and 1872	46.74
12456	Homer A. Follett, Sheldonville, Mass	do	1868 and 1870	84.50
12457	J. E. Smith, Smithville, Mass	do	1866 and 1868	48.96
	do	do	1868 and 1870	38.20
	do	do	1870 and 1872	21.54
12458	Wm. H. Weston, Somerville, Mass	do	1866 and 1868	137.68
	do	do	1868 and 1870	134.38
12459	Waitstilla Dickinson, South Amherst, Mass.	do	1872 and 1874	23.48
12460	James T. Bestick, South Braintree, Mass	do	1866 and 1867	63.06
12461	Augustus F. Tillson, South Carver, Mass	do	1868	6.66
	do	do	1870 and 1872	44.54
12462	Thos. E. Sanford, South Dartmouth, Mass	do	1866 and 1868	94.42
	do	do	1868 and 1870	88.08
12463	George Copeland, South Easton, Mass	do	1866 and 1868	73.86
12464	Jos. A. Benjamin, South Egremont, Mass.	do	1870 and 1872	47.28
12465	S. W. A. Stevens, South Gardner, Mass	do	do	89.20
	do	do	1872 and 1874	126.46
12466	Hiram Smith, South Hadley Falls, Mass	do	1870 and 1872	219.00
22467	Ard. G. Judd, Southampton, Mass	do	1866 and 1868	72.34
12468	Isaac G. Stetson, South Hanover, Mass	do	1870 and 1872	73.22
12469	Andrew Cushing, South Hingham, Mass.	do	1866 and 1867	34.89
12470	Josiah Lane, South Hingham, Mass	do	1867 and 1868	34.89
	do	do	1868 and 1870	26.12
12471	Alonzo Cushing, South Hingham, Mass	do	1872 and 1874	37.54
12472	Hamblet B. Fisk, South Milford, Mass	do	1867 and 1868	8.70
	do	do	1870 and 1872	21.30
12473	Josiah C. Hovey, South Plymouth, Mass.	do	1868 and 1870	10.38
	do	do	1870	1.55
12474	Adelaide Hovey, South Plymouth, Mass.	do	1870 and 1872	11.34
12475	Daniel Taxon, South Randolph, Mass	do	1870	12.16
	do	do	1871 and 1872	36.49
	do	do	1872 and 1873	15.17
12476	Rollin A. Webster, South Sandisfield, Mass.	do	1870 and 1872	24.48
	do	do	1872 and 1873	5.70
12477	S. C. Howland, South Sandwich, Mass	do	1866 and 1868	72.06
	do	do	1870 and 1872	23.38
	do	do	1868 and 1870	21.26
	do	do	1872 and 1874	44.90
12478	Frederick Brownwell, South Westport, Mass.	do	1866 and 1868	17.24
	do	do	1868 and 1870	8.92
	do	do	1870	1.14
12479	Samuel Gifford, South Westport, Mass	do	1871 and 1872	2.85
12480	Eleazor S. Wright, South Weymouth, Mass.	do	1866 and 1868	209.32
12481	Noah Vining, South Weymouth, Mass	do	1866	9.22
12482	Peleg P. Aiken, South Yarmouth, Mass.	do	1866 and 1868	82.90
	do	do	1868 and 1870	50.36

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12400	L. F. Smith, Northbridge, Mass	Compensation of postmasters readjusted, etc.	1868 and 1870	$61.02
12401	W. B. Fuller, Northbridge Centre, Mass.	do	1866 and 1868	44.90
	do	do	1872 and 1874	72.10
12402	Benjamin Ransom, North Carver, Mass	do	1866 and 1868	10.16
	do	do	1870 and 1872	18.72
	do	do	1872 and 1874	14.10
12403	Benjamin T. Freeman, North Chatham, Mass.	do	1868 and 1870	19.34
12404	Joseph W. Smith, North Chelmsford, Mass.	do	1868 and 1869	73.48
12405	Elisha H. Shaw, North Chelmsford, Mass.	do	1869 and 1870	33.23
	do	do	1872 and 1874	119.00
12406	Wm. L. Poland, North Brookfield, Mass	do	1870 and 1872	251.76
12407	James L. Wiggin, North Chelsea, Mass	do	1866 and 1868	47.96
	do	do	1868 and 1870	23.32
12408	Herman Powers, North Chester, Mass	do	1866 and 1868	27.32
	do	do	1868 and 1870	18.20
	do	do	1870 and 1872	10.16
	do	do	1872 and 1874	7.18
12409	Welcome Beal, North Cohasset, Mass	do	1866 and 1868	31.04
	do	do	1868 and 1870	39.76
12410	D. L. Richards, North Dana, Mass	do	1870	14.44
	do	do	1870 and 1872	59.56
	do	do	1872 and 1873	11.09
12411	Otis Chittenden, North Leverett, Mass	do	1866 and 1868	37.92
	do	do	1870 and 1872	48.04
12412	Erasmus D. Andrews, North New Salem, Mass.	do	1872 and 1874	10.78
12413	Nathan L. Johnson, North Orange, Mass.	do	1868 and 1870	22.58
	do	do	1870 and 1872	19.10
	do	do	1872 and 1874	37.30
12414	James M. Harrul, North Plympton, Mass.	do	1870 and 1872	7.78
	do	do	1872 and 1874	13.36
12415	E. A. Thomas, North Prescott, Mass	do	1866 and 1868	28.26
12416	Alonzo E. Damon, North Reading, Mass.	do	1868 and 1870	77.18
	do	do	1872 and 1874	80.76
12417	John B. Dornin, North Rochester, Mass	do	1866 and 1868	19.74
12418	C. Bourne, North Sandwick, Mass	do	1868 and 1870	23.26
	do	do	1870 and 1872	39.66
12419	Benj. Brown, jr., North Scituate, Mass	do	1866 and 1868	114.22
	do	do	1870 and 1872	74.28
	do	do	1872 and 1874	85.84
12420	Jonas Wilson, North Spencer, Mass	do	1866 and 1868	22.68
12421	John Sawyer, North Sudbury, Mass	do	do	8.04
	do	do	1868	3.12
12422	Edwin A. Conant, North Sudbury, Mass.	do	1869 and 1870	9.37
	do	do	1870 and 1872	21.84
	do	do	1872 and 1874	13.94
12423	Mason Barney, North Swansea, Mass	do	1866 and 1868	19.24
12424	Levi French, Northwest Bridgewater, Mass.	do	do	13.38
	do	do	1868 and 1870	64.80
	do	do	1870 and 1872	16.80
12425	Henry Newton, North Weymouth, Mass.	do	1866 and 1867	28.18
12426	John W. Bartlett, North Weymouth, Mass.	do	1867 and 1868	59.15
	do	do	1868 and 1870	156.98
12427	Henry Trowbridge, North Wrentham, Mass.	do	1866 and 1868	36.52
	do	do	1868 and 1870	64.46
	do	do	1872 and 1874	72.66
12428	Edward E. Thompson, North Woburn, Mass.	do	1866 and 1868	222.68
	do	do	1868 and 1870	60.14
	do	do	1870 and 1872	55.42
	do	do	1882 and 1874	78.26
12429	S. M. Osgood, Otter River, Mass	do	1866 and 1867	30.16
12430	Enos S. Richardson, Pelham, Mass	do	do	13.57
12431	James H. Whitman, Pembroke, Mass	do	1866 and 1868	16.16
12432	Sumner Carter, Pepperell, Mass	do	1866 and 1867	31.16
12433	John G. Shattuck, Pepperell, Mass	do	1867	26.48
12434	Jason Goulding, Phillipston, Mass	do	1866 and 1868	56.72
	do	do	1870 and 1872	40.28
	do	do	1872 and 1874	27.66
12435	John P. Cheever, Plainville, Mass	do	1866 and 1868	78.44
	do	do	1868 and 1870	38.88

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12435	John P. Cheever, Plainville, Mass	Compensation of postmasters readjusted, etc.	1870 and 1872	$23.66
	do	do	1872 and 1873	45.78
12436	Asa Raymond, Pocasset, Mass	do	1866 and 1868	40.66
12437	Alphonso Brooks, Princeton, Mass	do	1866	1.17
12438	George L. Gill, Quincy, Mass	do	do	81.57
12439	John B. Bass, Quincy, Mass	do	1866 and 1868	406.51
12440	Richard A. Leonard, Raynham, Mass	do	do	46.68
12441	L. E. Gleason, Reading, Mass	do	1872 and 1874	190.40
12442	John C. Marvel, Rehoboth, Mass	do	1866 and 1868	74.84
	do	do	1868 and 1870	10.78
12443	Wm. D. Sanderson, Ringville, Mass	do	do	33.58
	do	do	1866 and 1868	23.72
	do	do	1872 and 1874	21.02
12444	John Ballou, Rowe, Mass	do	1866 and 1868	20.44
12445	Edward Wright, Rowe, Mass	do	1868	2.92
	do	do	1870 and 1872	56.80
12446	Henry C. Nye, Rochester, Mass	do	do	47.44
12447	Thos. B. Cressey, Rowley, Mass	do	1866 and 1868	58.24
12448	J. Scott Todd, Rowley, Mass	do	1870 and 1872	40.48
	do	do	1872 and 1874	78.96
12449	Alonzo Davis, Rutland, Mass	do	1866 and 1868	57.92
12450	Gilbert C. Taft, Saunderville, Mass	do	1868 and 1870	55.58
	do	do	1870 and 1872	50.46
	do	do	1872 and 1874	24.30
12451	Calvin Bowker, Savoy, Mass	do	1870 and 1872	43.28
12452	Julian D. Lawrence, Saugus Centre, Mass	do	1866 and 1868	133.56
12453	Calvin Bowker, Savoy, Mass	do	1872 and 1874	58.30
12454	Andrew N. Medbery, Seekonk, Mass	do	do	11.16
12455	C. W. Shattuck, Shattuckville, Mass	do	1870 and 1872	46.74
12456	Homer A. Follett, Sheldonville, Mass	do	1868 and 1870	84.50
12457	J. E. Smith, Smithville, Mass	do	1866 and 1868	48.96
	do	do	1868 and 1870	38.20
	do	do	1870 and 1872	21.54
12458	Wm. H. Weston, Somerville, Mass	do	1866 and 1868	137.68
	do	do	1868 and 1870	134.38
12459	Waitstilla Dickinson, South Amherst, Mass.	do	1872 and 1874	23.48
12460	James T. Bestick, South Braintree, Mass	do	1866 and 1867	63.06
12461	Augustus F. Tillson, South Carver, Mass	do	1868	6.66
	do	do	1870 and 1872	44.54
12462	Thos. E. Sanford, South Dartmouth, Mass	do	1866 and 1868	94.42
	do	do	1868 and 1870	86.08
12463	George Copeland, South Easton, Mass	do	1866 and 1868	73.86
12464	Jos. A. Benjamin, South Egremont, Mass.	do	1870 and 1872	47.28
12465	S. W. A. Stevens, South Gardner, Mass	do	do	89.20
	do	do	1872 and 1874	126.46
12466	Hiram Smith, South Hadley Falls, Mass	do	1870 and 1872	219.00
12467	Ard. G. Judd, Southampton, Mass	do	1866 and 1868	72.34
12468	Isaac G. Stetson, South Hanover, Mass	do	1870 and 1872	73.22
12469	Andrew Cushing, South Hingham, Mass.	do	1866 and 1867	34.89
12470	Josiah Lane, South Hingham, Mass	do	1867 and 1868	34.89
	do	do	1868 and 1870	26.12
12471	Alonzo Cushing, South Hingham, Mass	do	1872 and 1874	37.54
12472	Hamblet B. Fisk, South Milford, Mass	do	1867 and 1868	8.70
	do	do	1870 and 1872	21.30
12473	Josiah C. Hovey, South Plymouth, Mass.	do	1868 and 1870	10.38
	do	do	1870	1.55
12474	Adelaide Hovey, South Plymouth, Mass.	do	1870 and 1872	11.34
12475	Daniel Taxon, South Randolph, Mass	do	1870	12.16
	do	do	1871 and 1872	36.49
	do	do	1872 and 1873	15.17
12476	Rollin A. Webster, South Sandisfield, Mass.	do	1870 and 1872	24.48
	do	do	1872 and 1873	5.70
12477	S. C. Howland, South Sandwich, Mass	do	1866 and 1868	72.06
	do	do	1870 and 1872	23.38
	do	do	1868 and 1870	21.26
	do	do	1872 and 1874	44.90
12478	Frederick Brownwell, South Westport, Mass.	do	1866 and 1868	17.24
	do	do	1868 and 1870	8.92
	do	do	1870	1.14
12479	Samuel Gifford, South Westport, Mass	do	1871 and 1872	2.85
12480	Eleazor S. Wright, South Weymouth, Mass.	do	1866 and 1868	209.32
12481	Noah Vining, South Weymouth, Mass	do	1866	9.22
12482	Peleg P. Aiken, South Yarmouth, Mass	do	1866 and 1868	82.90
	do	do	1868 and 1870	50.36

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12483	Paul Wing, Spring Hill, Mass	Compensation of postmasters readjusted, etc.	1868 and 1869	$37.21
12484	Joseph C. Holway, Spring Hill, Mass	do	1869 and 1870	62.01
	do	do	1872 and 1874	28.46
12485	Wm. F. Bateman, Still River, Mass	do	1868 and 1870	17.26
12486	Nathaniel Wales, Stoughton, Mass	do	1866 and 1867	99.62
12487	B. A. Burbeck, Sudbury, Mass	do	1867 and 1868	32.13
12488	Horace Lyman, Sunderland, Mass	do	1866 and 1868	96.58
12489	Jacob P. Porter, Swampscott, Mass	do	do	108.57
12490	Jno. A. Wood, Swansea, Mass	do	1866 and 1867	15.97
12491	Henry O. Wood, Swansea, Mass	do	1867 and 1868	15.97
12492	Samuel C. Paine, Truro, Mass	do	1866 and 1868	99.78
12493	H. A. Littlehale, Tyngsborough, Mass	do	do	48.44
	do	do	1870 and 1872	80.92
12494	Horace Forbush, Upton, Mass	do	1866 and 1868	84.94
12495	Henry M. Spear, Washington, Mass	do	1870 and 1872	16.68
	do	do	1872 and 1874	14.32
12496	Archibald M. Masters, Watertown, Mass	do	do	279.90
12497	George H. Gill, Walpole, Mass	do	1867 and 1868	53.96
12498	Abner Albee, Warwick, Mass	do	1866 and 1878	64.08
	do	do	1868 and 1870	35.78
12499	Lyman G. Gould, Wendell, Mass	do	1870 and 1872	17.16
12500	Chas. Hastings, West Acton, Mass	do	1866 and 1868	65.26
12501	Mercy Ryder, West Brewster	do	do	20.86
	do	do	1868 and 1870	16.66
12502	Theodore Gay, West Dedham, Mass	do	1866 and 1868	30.64
	do	do	1868 and 1870	76.04
	do	do	1870 and 1872	40.68
	do	do	1872 and 1874	90.24
12503	George Edwards, West Dudley, Mass	do	do	8.42
12504	Gilbert R. Boyce, West Falmouth, Mass	do	do	24.18
12505	Wm. Baldwin, jr., West Fitchburg, Mass	do	1866 and 1868	106.50
	do	do	1868 and 1870	361.96
	do	do	1872 and 1874	80.86
12506	Lyman W. Shepard, West Granville, Mass	do	1866 and 1868	48.76
	do	do	1868 and 1869	14.57
12507	Thos. C. Davenport, Westhampton, Mass	do	1870 and 1872	40.94
	do	do	1872 and 1874	42.36
12508	John Cushing, West Medway, Mass	do	1866	16.40
12509	Lewis Clark, West Medway, Mass	do	1866 and 1868	96.29
12510	Henry M. Jones, West Otis, Mass	do	1867 and 1868	6.65
	do	do	1868	.77
12511	N. Wales Winchester, Westport, Mass	do	1868 and 1870	61.76
12512	Alexander H. Cory, Westport Point, Mass.	do	1866 and 1868	24.20
12513	Andrew J. Peirce, West Rutland, Mass	do	do	7.94
12514	B. N. Curtis, West Scituate, Mass	do	do	58.06
12515	L. Leonard, West Springfield, Mass	do	1866	9.66
12516	Walter E. Cooley, West Springfield, Mass.	do	1866 and 1867	19.31
12517	J. B. Mum, West Stockbridge, Mass	do	1866 and 1868	5.50
	do	do	1870 and 1872	6.16
12518	Julius Fitts, West Sterling, Mass	do	1868 and 1870	11.62
	do	do	1870 and 1872	11.22
12519	Moses S. Tobey, West Wareham, Mass	do	do	47.12
12520	Geo. W. White, jr., Weymouth, Mass	do	1866	38.61
12521	Ann R. White, Weymouth, Mass	do	1866 and 1868	270.27
	do	do	1868	29.43
12522	Geo. W. White, jr., Weymouth, Mass	do	1869 and 1870	88.31
12523	James T. Whitin, Whitinsville, Mass	do	1870 and 1872	187.04
12524	Jos. A. Ames, Wilmington, Mass	do	1866 and 1868	110.42
	do	do	1868 and 1870	94.26
	do	do	1870 and 1872	59.50
12525	Warren Belcher, Winthrop, Mass	do	do	9.96
12526	Horace Cole, Worthington, Mass	do	1866 and 1868	28.24
	do	do	1868 and 1870	37.52
12527	M. G. Sage, Adamsville, Mich	do	1866 and 1868	50.23
	do	do	1872 and 1873	8.49
12528	D. P. Allen, Alamo, Mich	do	1866 and 1868	16.00
	do	do	1868	.85
12529	C. W. Barber, Alamo, Mich	do	1870	1.69
	do	do	1872 and 1873	6.79
12530	Geo. L. Clark, Algansee, Mich	do	1866 and 1868	15.66
	do	do	1868 and 1870	5.36
12531	Falkert C. Falkerts, Algonac, Mich	do	1866	17.12
12532	Daniel G. Jones, Algonac, Mich	do	1866 and 1868	96.37
12533	Falkert C. Falkerts, Algonac, Mich	do	1870 and 1872	84.22
	do	do	1872 and 1874	86.96
12534	Andrew Winchester, Allen, Mich	do	1866 and 1868	105.84

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12535	Hiram Bowen, Almira, Mich	Compensation of postmasters readjusted, etc.	1866 and 1867	$7.05
12536	Daniel W. Richardson, Almont, Mich	do	1866	37.30
12537	James H. Andrews, Almont, Mich	do	1866 and 1868	138.97
12538	A. V. Amerman, Almont, Mich	do	1868	46.91
12539	D. M. Skidmore, Almont, Mich	do	1866 and 1868	21.54
	do	do	1868 and 1870	7.30
	do	do	1870 and 1872	33.58
	do	do	1872 and 1874	16.70
12540	D. Millard Hendricks, Alton, Mich	do	1866 and 1868	19.93
12541	Walter E. King, Amboy, Mich	do	do	25.38
	do	do	1868 and 1870	5.84
	do	do	1870 and 1871	8.67
12542	Broughton Goodsell, Amsden, Mich	do	1871 and 1872	4.88
	do	do	1872 and 1873	8.19
12543	Beach G. Whitney, Argentine Mich	do	1867 and 1868	11.76
12544	Pulaski J. Bryan, Arland, Mich	do	do	35.47
12545	Selah P. Havens, Arenac, Mich	do	1866 and 1867	5.44
12546	W. W. Wing, Arenac, Mich	do	1867 and 1868	6.04
12547	Cornelius Tompkins, Assyria, Mich	do	1869 and 1870	4.37
12548	Amos W. Bowen, Assyria, Mich	do	1870 and 1872	5.32
	do	do	1872 and 1874	13.60
12549	Sylvester S. Ware, Athens, Mich	do	1866	13.30
12550	Samuel R. Culp, Athens, Mich	do	1866 and 1868	47.50
12551	James H. Watkins, Athens, Mich	do	1870 and 1872	80.74
	do	do	1872 and 1874	36.30
12552	Jonathan Palmer, Atlas, Mich	do	1866 and 1868	20.16
12553	Edward Bradley, Au Gres, Mich	do	1870 and 1872	33.58
12554	George P. Warner, Au Sable, Mich	do	1871 and 1872	73.32
12555	Chas. H. Tracy, Austerlitz, Mich	do	1866	33.80
12656	Thomas Triant, Austerlitz, Mich	do	1867 and 1868	84.50
12557	A. R. Snyder, Baldwin Mills, Mich	do	1868 and 1870	26.44
12558	Justus Sutherland, Bainbridge, Mich	do	1866 and 1868	5.64
	do	do	1868	6.12
22559	George F. Stewart, Bainbridge, Mich	do	1869 and 1870	18.39
	do	do	1872 and 1873	20.68
12560	David M. Knox, Bath, Mich	do	1868 and 1869	22.50
12561	David Anderson, Bear Lake Mills, Mich	do	1870 and 1871	16.56
12562	Cortland Hill, Bengal, Mich	do	1866 and 1868	12.86
	do	do	1868 and 1870	7.94
	do	do	1870 and 1872	14.48
12563	W. R. Drury, Bennington, Mich	do	1868 and 1870	20.38
12564	D. C. Higbee, Bertrand, Mich	do	1872 and 1874	5.02
12565	John B. Frost, Berville, Mich	do	do	20.36
12566	Allen C. Townsend, Bethel, Mich	do	1867 and 1868	8.27
13567	O. H. McClain, Big Springs, Mich	do	do	2.22
	do	do	1868 and 1870	6.62
	do	do	1870 and 1872	19.20
12568	V. P. French, Big Prairie, Mich	do	1866 and 1868	45.64
12569	Samuel Howe, Big Prairie, Mich	do	1868 and 1870	34.60
	do	do	1870 and 1872	13.40
12570	George L. Lee, Birmingham, Mich	do	1866	16.34
12571	James Gibbs, Blackberry Ridge, Mich	do	1870 and 1872	29.28
	do	do	1872 and 1874	33.84
12572	James M. Cole, Blair, Mich	do	1866 and 1868	34.32
	do	do	1868 and 1870	15.06
	do	do	1872 and 1873	2.40
12573	Hiram S. Knight, Blissfield, Mich	do	1866	41.94
12574	George Giles, Blissfield, Mich	do	1867	13.60
12575	Hiram D. Ellis, Blissfield, Mich	do	1867 and 1868	104.86
12576	A. K. Richardson, Bloomer Centre, Mich	do	1866 and 1868	16.32
12577	Theodore B. Wilcox, Bluffton, Mich	do	1870 and 1872	70.30
12578	Nathaniel C. Johnson, Bowne, Mich	do	1866 and 1868	17.72
	do	do	1868	1.82
12579	James C. Johnson, Bowne, Mich	do	1870	1.46
12580	Roswell F. Tyler, Bowne, Mich	do	1868 and 1870	10.80
12581	N. Steel, Bostwick Lake, Mich	do	1866 and 1867	15.45
12582	Andrew C. Van Tassell, Bradley, Mich	do	do	14.27
12583	John W. Brakeman, Bradley, Mich	do	1867 and 1868	18.42
12584	J. D. Merrill, Bridgeton, Mich	do	1866 and 1868	22.68
	do	do	1868 and 1870	14.38
	do	do	1870 and 1871	13.06
12585	Geo. H. Brown, Bridgeton, Mich	do	1871 and 1872	21.77
12586	Jacob Blinn, Bridgewater, Mich	do	1868	.41
12587	Henry A. Harman, Brooklyn, Mich	do	1867 and 1868	258.99
12588	Hiel Woodward, Brooklyn, Mich	do	1872	18.28
12589	Willett S. Harvey, Brownstown, Mich	do	1866	28.85
12590	Lewis Cowgill, Brownsville, Mich	do	1866 and 1868	44.68
	do	do	1870 and 1871	8.98
12591	Wm. C. Griffin, Bushnell Centre, Mich	do	1866 and 1868	40.50

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount
12592	Lorenzo P. Alexander, Buchanan, Mich.	Compensation of postmasters readjusted, etc.	1866	$28.20
12593	Howell F. Strong, Buchanan, Mich	do	1866 and 1867	67.32
12594	Amos Corey, Buck Creek, Mich	do	1866 and 1868	26.16
12595	James M. Brown, Buck Creek, Mich	do	1866 and 1867	13.64
12596	Amos Corey, Buck's Creek, Mich	do	1868 and 1869	9.30
12597	Elliott H. Angell, Bunker Hill, Mich	do	1866 and 1868	11.32
12598	B. N. Stone, Burnt Oak, Mich	do	do	135.66
12599	Barzillai H. Calkins, Butler, Mich	do	1866 and 1867	14.46
12600	James A. Coon, Butler, Mich	do	1867 and 1868	24.11
	do	do	1870 and 1872	8.40
	do	do	1872 and 1874	14.34
12601	J. H. Lawrence, California, Mich	do	1866	1.98
12602	Henry Kelso, California, Mich	do	1866 and 1868	8.82
12603	Chas. H. Dewey, Cambridge, Mich	do	1870 and 1872	6.52
	do	do	1872 and 1874	15.56
12604	Frederick Chester, Camden, Mich	do	1866	5.39
12605	Joseph Seeley, Camden, Mich	do	1866 and 1868	25.64
	do	do	1868 and 1869	8.07
12606	C. R. Lackey, Camden, Mich	do	1869 and 1870	13.45
12607	Alva J. McCormick, Campbell, Mich	do	1866 and 1868	12.52
12608	Wm. Hewit, Campbell, Mich	do	1868	2.85
	do	do	1868 and 1870	24.58
	do	do	1870 and 1872	14.50
	do	do	1872 and 1874	19.40
12609	Abraham Kromer, Cannonsburgh, Mich.	do	1866	7.03
12610	Ira Ellis, Cannonsburgh, Mich	do	1867 and 1868	21.08
	do	do	1868 and 1869	18.69
12611	Abraham Kromer, Cannonsburgh, Mich.	do	1867 and 1870	15.79
12612	John W. Hall, Carlisle, Mich	do	1866 and 1868	22.24
12613	Addison H. Mack, Carson City, Mich	do	1870 and 1872	41.30
12614	Wm. Miller, Casco, Mich	do	1866 and 1868	41.16
	do	do	1868 and 1870	14.99
12615	Ezra D. Johnson, Cascade, Mich	do	1866 and 1868	37.66
	do	do	1868 and 1870	14.02
12616	Wm. L. Cook, Cass Bridge, Mich	do	1866 and 1868	5.28
	do	do	1868 and 1870	3.92
	do	do	1870 and 1872	4.64
	do	do	1872 and 1874	11.52
12617	John C. Laing, Cass City, Mich	do	do	27.38
12618	Francis Crawford, Caseville, Mich	do	1870 and 1872	24.52
12619	H. B. Dunning, Cassopolis, Mich	do	1866 and 1868	74.86
12620	Chas. E. Wright, Cato, Mich	do	do	45.15
12621	E. H. Stryker, Cato, Mich	do	1868	7.52
	do	do	1868 and 1870	88.56
12622	Daniel Corry, Cedar Fork, Mich	do	1866 and 1868	14.70
	do	do	1868 and 1870	90.50
12623	Jacob S. Davis, Centre, Mich	do	1872 and 1874	6.32
12624	Isaac C. Williams, Chester, Mich	do	1866 and 1868	5.43
12625	Elijah Bottomley, Chester, Mich	do	do	6.93
12626	Isaac C. Williams, Chester, Mich	do	1868	22.45
12627	S. A. Drone, China, Mich	do	1866 and 1868	30.16
12628	Henry J. Colwell, Clarksburgh, Mich	do	1870 and 1872	449.52
	do	do	1872 and 1873	103.38
12629	S. N. Bentley, Clarendon Centre, Mich	do	1866 and 1868	25.64
	do	do	1868 and 1870	4.68
	do	do	1870 and 1871	1.84
12630	C. I. Cartright, Clarence, Mich	do	1866 and 1868	9.80
12631	Ardin W. Leyman, Clifford, Mich	do	1866	5.55
12632	Wellington Eldred, Climax, Mich	do	1866 and 1867	16.05
12633	Chas. E. Hodgman, Climax Prairie, Mich.	do	1867 and 1868	32.12
12634	Moses Hodgman, Climax Prairie, Mich	do	1866	13.69
12635	Chas. E. Hodgman, Climax Prairie, Mich.	do	1868 and 1870	27.84
12636	Rich'd Wrigglesworth, Cohoctah, Mich	do	1866 and 1868	12.48
	do	do	1868 and 1870	2.60
	do	do	1870 and 1872	10.22
12637	James H. Murrin, Coloma, Mich	do	1866 and 1868	22.29
12638	Robert Ramsey, Columbus, Mich	do	1866	3.77
12639	J. M. Dodge, Concord, Mich	do	1866 and 1868	122.74
12640	Abraham Vosbrugh, Convis, Mich	do	1866	4.82
12641	T. A. Randall, Convis Centre, Mich	do	1870 and 1872	6.07
12642	Henry Snyder, Conway, Mich	do	1866 and 1868	14.73
12643	O. J. Woodard, Cooper, Mich	do	1866 and 1867	24.84
12644	Clark Adams, Cooper, Mich	do	1867 and 1868	54.30
	do	do	1868 and 1870	41.23
12645	John W. Brakeman, Cooper, Mich	do	1870	5.89
	do	do	1870 and 1872	23.08
12646	Wm. H. Wilson, Cooperaville, Mich	do	1866	3.86
12647	Wm. S. Hovey, Cooperaville, Mich	do	1867	17.77
12648	Joseph Brown, Cooperaville, Mich	do	1867 and 1868	22.90

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12648	Joseph Brown, Coopersville, Mich	Compensation of postmasters readjusted, etc.	1868 and 1870	$79.74
12649	D. D. Brockway Copper Harbor, Mich	do	1866 and 1868	85.78
12650	George T. Saunders, Courtland Centre, Mich.	do	do	71.42
	do	do	1872 and 1874	12.06
12651	David B. Allen, Covert, Mich	do	1870 and 1872	25.36
12652	Arthur Truesdale, Croton, Mich	do	1866 and 1868	75.84
12653	Benjamin A. Smith, Crawford, Mich	do	1870 and 1872	7.28
	do	do	1872 and 1874	6.60
12654	Anson L. Smith, Crystal, Mich	do	1870 and 1872	21.04
12655	James Lance, Dallas, Mich	do	1866 and 1868	27.24
12656	Zeph Redding, Dayton, Mich	do	do	45.78
12657	L. Ormsby, Deerfield, Mich	do	1871 and 1872	31.23
12658	Theodore E. Phelps, Decatur, Mich	do	1866	97.91
12659	Elmeria Phelps, Decatur, Mich	do	1866 and 1868	409.53
12660	Eri Beebe, Decatur, Mich	do	1870 and 1872	274.10
12661	Mrs. H. L. McKey, Deerfield, Mich	do	1866 and 1868	116.14
12662	Elias B. Oakley, Delta, Mich	do	1868 and 1870	21.02
	do	do	1870 and 1871	7.13
12663	Henry Carr, Denmark, Mich	do	1866 and 1867	3.80
12664	Chas. J. Leonard, Denmark, Mich	do	1867 and 1868	3.65
	do	do	1870 and 1872	22.92
12665	Ayer C. Putnam, Douglas, Mich	do	do	65.08
12666	A. W. Linderman, Drayton Plains, Mich	do	1868	5.00
12667	Wm. Capron, Drayton Plains, Mich	do	1869 and 1870	15.01
	do	do	1870 and 1871	27.93
12668	Joseph Manwaring, Dryden, Mich	do	1866	25.46
12669	Wm. Quartermass, Dryden, Mich	do	1867 and 1868	76.38
12670	C. F. W. Rawson, Dundee, Mich	do	1866 and 1868	125.00
12671	Wm. Smead, Du Plain, Mich	do	1869 and 1870	25.11
12672	Chas. H. Deming, Dutton, Mich	do	1872 and 1874	12.04
12673	Eri Beebe, Decatur, Mich	do	1872 and 1873	202.78
12674	Mrs. H. L. McKey, Deerfield, Mich	do	1868 and 1869	55.81
12675	Martin Foley, Eagle Harbor, Mich	do	1867 and 1868	198.66
12676	Julius Frend, Eagle Harbor, Mich	do	1866	66.22
12677	Chas. Kutter, Eagle River, Mich	do	do	47.42
12678	Gustave Deimel, Eagle River, Mich	do	1866 and 1868	322.13
	do	do	1868 and 1869	52.38
12679	Wm. Dildine, Easton, Mich	do	1866	8.71
12680	Adam Wagner, Eastmansville, Mich	do	1868 and 1870	63.74
	do	do	1870 and 1872	41.18
	do	do	1872 and 1874	47.98
12681	Frank Stringer, East Nankin, Mich	do	1866 and 1868	18.06
12682	Jacob Mitchell, East Raisinville, Mich	do	do	4.12
	do	do	1868	1.00
12683	Samuel Hull, East Riverton, Mich	do	1872 and 1874	8.20
12684	W. T. Stowe, East Ogden, Mich	do	1866 and 1867	5.69
12685	Almon M. Chapin, Eden, Mich	do	1866 and 1868	22.46
12686	C. Kennedy, Edwardsburgh, Mich	do	1866	15.73
12687	John Hunter, Elk, Mich	do	1872 and 1874	3.38
12688	Baron Blanchard, Elm Hall, Mich	do	1866	17.42
12689	A. L. Chapman, Elm, Mich	do	1866 and 1868	27.90
12690	Job D. Sickels, Elsie, Mich	do	1868 and 1870	32.96
	do	do	1872 and 1874	125.36
12691	John Weeman, Erie, Mich	do	1866 and 1868	93.06
	do	do	1868 and 1870	38.56
	do	do	1870 and 1872	42.60
	do	do	1872 and 1874	45.20
12692	Eli P. Royce, Escanaba, Mich	do	1868 and 1870	180.34
12693	Willard M. Daggatt, Eureka, Mich	do	1872 and 1874	24.46
12694	H. C. Schnoor, Fair Haven, Mich	do	1866 and 1868	14.32
	do	do	1872 and 1874	11.26
	do	do	1868 and 1870	31.80
12695	John W. Fallas, Fallasburgh, Mich	do	1871 and 1872	37.40
12696	Friend D. Maxon, Farm, Mich	do	1866 and 1867	9.79
12697	Wm. Thomson, Farmers, Mich	do	1871 and 1872	18.03
	do	do	1872 and 1874	9.30
12698	John W. Collins, Farmington, Mich	do	1866	27.00
12699	George W. Drake, Farmington, Mich	do	1866 and 1867	68.54
12700	Stephen Atwater, Fennville, Mich	do	1870 and 1872	165.90
12701	Russell Ransom, Flat Rock, Mich	do	do	65.04
12702	John Q. Park, Fleming, Mich	do	1866 and 1868	14.60
	do	do	1868 and 1870	9.38
	do	do	1872 and 1874	5.65
12703	W. D. Ludington, Forest Bay, Mich	do	1868 and 1870	9.70
	do	do	1870	.73
12704	Jno. C. Schmidt, Frankenlust, Mich	do	1866 and 1868	12.20
	do	do	1868 and 1870	8.50
	do	do	1870 and 1872	8.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12705	Chas. Coder, Franklin, Mich	Compensation of postmasters readjusted, etc.	1866 and 1868	$23.14
12706	A. A. Rust, Franklin, Mich	do	1870 and 1872	39.52
	do	do	1872 and 1874	35.22
12707	Herman Knoor, Frazer, Mich	do	1870 and 1872	14.94
12708	Adonijah E. Upton, Fremont Centre, Mich.	do	1866 and 1867	6.26
12709	James H. Darling, Fremont Centre, Mich.	do	1869 and 1870	4.52
12710	George P. Mason, Fulton, Mich	do	1871 and 1872	16.50
12711	George R. Runyan, Gaines Station, Mich.	do	1866 and 1868	79.97
12712	James F. Sharp, Gainesville, Mich	do	1870	4.19
12713	Elijah Wever, Ganges, Mich	do	1866 and 1868	95.92
	do	do	1870 and 1872	46.42
12714	Wm. Ferguson, Ganges, Mich	do	1872 and 1874	26.32
12715	Ainsworth Reed, Geary, Mich	do	1866 and 1868	6.00
	do	do	1868 and 1870	4.24
12716	Wm. M. Rogers, Genesee Village, Mich	do	1866 and 1867	11.58
12717	Mosier L. Hovey, Genesee Village, Mich	do	1867 and 1868	11.58
	do	do	1872 and 1873	3.41
12718	Robert W. Linn, Gibraltar, Mich	do	1867 and 1868	10.65
	do	do	1868 and 1870	20.54
	do	do	1870 and 1872	67.78
	do	do	1872 and 1874	25.04
12719	Martha Perry, Girard, Mich	do	do	31.44
12720	Hiram E. Goble, Gobleville, Mich	do	1866 and 1868	7.20
12721	Wm. H. Putnam, Goodrich, Mich	do	do	125.28
12722	Lewis Moody, Grandville, Mich	do	1866 and 1867	56.08
12723	L. B. Littlefield, Grafton, Mich	do	1870 and 1872	3.65
12724	Abel H. Brink, Graafschap, Mich	do	do	15.32
12725	Wm. C. Slayton, Grant, Mich	do	1866 and 1868	11.80
	do	do	1868 and 1870	6.82
	do	do	1870 and 1872	7.70
	do	do	1872 and 1874	3.08
12726	Henry Sissom, Grass Lake, Mich	do	1866 and 1868	363.31
12727	P. T. Stocking, Grattan, Mich	do	do	29.44
12728	Wm. Doty, Gravel Run, Mich	do	1870 and 1873	2.58
	do	do	1872 and 1874	4.80
12729	Edwin K. Hoyden, Green Bush, Mich	do	1866 and 1867	33.69
12730	Norman F. Hough, Hadley, Mich	do	do	31.36
12731	Theodore Taylor, Hadley, Mich	do	1867 and 1868	52.26
12732	M. N. Kelley, Hadley, Mich	do	1872 and 1874	45.04
12733	Reuben S. Hall, Hamburgh Village, Mich	do	1866 and 1868	42.42
12734	Albert L. Hathway, Hartland, Mich	do	do	34.75
	do	do	1868 and 1869	12.30
12735	Geo. L. Colwell, Harrisville, Mich	do	1866 and 1868	72.90
12736	L. D. Harvey, Harvey, Mich	do	1870 and 1872	25.42
	do	do	1872 and 1874	10.28
12737	Jacob King, Hemlock City, Mich	do	do	29.06
12738	Samuel Prescott, Henrietta, Mich	do	1866 and 1868	3.26
12739	Delos A. Blodgett, Hersey, Mich	do	1872 and 1874	379.48
12740	James W. Dunning, Hesperia, Mich	do	1869 and 1870	7.00
	do	do	1870 and 1871	20.21
12741	Jas. M. Cadwallader, Hickory Corners, Mich.	do	1867 and 1868	141.78
	do	do	1872 and 1874	52.08
12742	Windham W. Hewitt, Highland, Mich	do	1868 and 1870	9.57
	do	do	1868	10.80
12743	Joseph S. Stockwell, Highland, Mich	do	1869 and 1870	28.71
	do	do	1870 and 1871	14.10
12744	Wm. Verbeck, Holland, Mich	do	1866 and 1868	146.93
12745	Samuel F. Hoffman, Holt, Mich	do	do	70.22
12746	L. W. Baker, Holt, Mich	do	1872 and 1874	15.76
12747	H. E. Hudson, Hudsonville, Mich	do	1870 and 1872	13.92
12748	Jacob L. Wallace, Huron Station, Mich	do	1868	3.27
12749	John Beattie, Huron City, Mich	do	1871 and 1872	17.41
12750	Joseph B. Deneen, Imlay, Mich	do	1866 and 1868	8.86
	do	do	1868	1.75
12751	Gilbert D. Johnson, Ishpeming, Mich	do	1866 and 1868	42.21
12752	Julius Ropes, Ishpeming, Mich	do	1868	6.03
12753	Wm. W. Comstock, Ithaca, Mich	do	1866	17.27
12754	B. F. Shepard, Ithaca, Mich	do	1866 and 1868	103.63
12755	Nathan Church, Ithaca, Mich	do	1868	17.27
12756	Sidney M. Sage, Jamestown, Mich	do	1870 and 1872	12.11
12757	Jefferson Jaquith, Jay, Mich	do	1866	4.24
12758	Wm. Roeser, Jay, Mich	do	1868	4.24
12759	Daniel Woodward, Jefferson, Mich	do	1870	1.83
12760	Anthony Van Arsdale, Jefferson, Mich	do	1871 and 1872	5.49
	do	do	1873 and 1874	4.12

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12761	Edwin Bulhand, Jeffersonville, Mich	Compensation of postmasters readjusted, etc.	1870 and 1872	$10.52
12762	John Lessiter, Jersey, Mich	do	1866 and 1868	7.32
	do	do	1868 and 1870	9.82
12763	Richard S. Varnum, Jonesville, Mich	do	1866 and 1806	121.94
12764	Calvin L. Spaulding, Jonesville, Mich	do	1867 and 1868	388.54
	do	do	1872 and 1874	298.24
12765	Amaziah Joy, Joyfield, Mich	do	do	12.98
12766	Wyon S. Peck, Kasson, Mich	do	do	30.20
12767	T. W. Duncombe, Keelersville, Mich	do	1866 and 1868	37.86
12768	Mrs. Bosworth, Kelloggsville, Mich	do	do	90.26
	do	do	1870 and 1871	6.54
12769	Mary Smith, Kensington, Mich	do	1866 and 1868	36.06
	do	do	1870 and 1872	14.92
12770	J. M. Kidd, Kiddville, Mich	do	1866 and 1868	5.00
	do	do	1870 and 1872	7.16
12771	Wm. M. Bristol, Kinderhook, Mich	do	1866 and 1868	13.86
12772	Leander Moyer, Koylton, Mich	do	1866 and 1867	6.79
12773	Edwin R. Saxton, Lakeview, Mich	do	1872	31.24
	do	do	1872 and 1873	21.22
12774	Isaac S. Ryman, Lakeview, Mich	do	1868	.94
	do	do	1868 and 1870	19.08
	do	do	1870 and 1872	18.52
	do	do	1872 and 1874	23.12
12775	Levi Sawtell, Lamotte, Mich	do	do	8.04
12776	I. I. Barker, Laphamville, Mich	do	1866	87.95
12777	Leonard D. Sumner, Lamont, Mich	do	1868 and 1870	58.78
	do	do	1870	3.14
12778	Wm. T. Per Lee, Lamont, Mich	do	1870 and 1872	47.06
	do	do	1872 and 1874	59.52
12779	John B. Potter, Lawrence, Mich	do	1866	21.75
12780	E. M. Johnson, Leonidas, Mich	do	1867	20.23
12781	Nathaniel Tompkins, Leonidas, Mich	do	1867 and 1868	93.37
12782	Hiram Gardner, Leoni, Mich	do	1866 and 1868	69.68
12783	Mrs. Harriet N. Nims, Lexington, Mich	do	do	217.82
	do	do	1870 and 1872	151.12
12784	Hiram D. Allen, Liberty, Mich	do	1868 and 1869	18.13
12785	A. S. Dunn, Liberty, Mich	do	1867 and 1868	25.01
12786	W. F. Tracy, Lima, Mich	do	1866 and 1867	26.36
12787	Oscar B. Guerin, Lima, Mich	do	1872 and 1873	15.14
12788	Chas. Brown, Linden, Mich	do	1866 and 1868	47.40
12789	Chas. Mears, Lincoln, Mich	do	1868 and 1870	24.38
12790	David I. Goodspeed, Little Prairie Ronde, Mich.	do	1870 and 1872	67.94
12791	Wm. Ostrander, London, Mich	do	1866 and 1868	41.21
12792	James S. Hunt, Macon, Mich	do	do	35.26
12793	H. W. Stevens, Macon, Mich	do	1872 and 1873	24.36
12794	Henry H. Johnson, Macomb, Mich	do	1866 and 1867	32.46
12795	Luther Field, Madison, Mich	do	do	11.66
12796	Chauncy Walbridge, Manchester, Mich	do	1866 and 1868	157.88
12797	Ralph R. Mann, Manlius, Mich	do	1866 and 1867	9.29
12798	E. R. Stickney, Manlius, Mich	do	1867 and 1868	15.47
12799	Gilbert Lapham, Maple Grove, Mich	do	1870 and 1871	18.99
12800	Elisha Mudge, Maple Rapids, Mich	do	1871 and 1872	20.76
12801	Custis Fowler, Mapleton, Mich	do	1868 and 1870	15.50
	do	do	1870 and 1872	16.14
12802	Jno. Spinks, Marine City, Mich	do	1872 and 1874	149.12
12803	John McGill, Marlette, Mich	do	1870 and 1872	20.34
	do	do	1872 and 1874	131.54
12804	Wm. Matthews, Martin, Mich	do	1866 and 1868	107.52
12805	Stephen Randall, Martinsville, Mich	do	1870 and 1872	8.08
12806	N. B. Mills, Marysville, Mich	do	1868 and 1870	16.78
	do	do	1870 and 1872	18.92
12807	Laban J. Lemert, Matherton, Mich	do	1866 and 1868	110.42
	do	do	1870 and 1871	33.58
12808	Chas. Brown, Medina, Mich	do	do	66.22
	do	do	1872 and 1874	35.90
12809	John D. Jones, Merrillsville, Mich	do	1866 and 1868	54.00
	do	do	1870 and 1872	11.60
12810	Orvin Granger, Memphis, Mich	do	1868	30.76
12811	H. C. Mansfield, Memphis, Mich	do	1869 and 1870	92.29
12812	Nathan F. Sheldon, Merritt, Mich	do	1866 and 1868	20.65
12813	Benj. G. Porter, Michan, Mich	do	1870 and 1872	23.27
12814	S. C. Edwards, Milan, Mich	do	1866 and 1868	107.11
12815	Edward S. Decker, Millbrook, Mich	do	1873 and 1874	41.23
12816	Byron Fisher, Milo, Mich	do	1868 and 1870	11.34
	do	do	1870 and 1872	12.54
	do	do	1872 and 1873	2.78
12817	Albert Jones, Minden, Mich	do	1872	1.54
12818	Andrew J. Mallery, Monterey, Mich	do	1866 and 1867	11.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12819	Joseph Hopmaster, Monterey, Mich	Compensation of postmasters readjusted, etc.	1867 and 1868	$15.56
12820	Richard W. Drinker, Morganville, Mich.	do	1866 and 1868	9.46
12821	David G. Mosher, Mosherville, Mich	do	1868 and 1870	27.12
	do	do	1866 and 1868	45.74
	do	do	1872 and 1874	44.58
12822	Thomas Wass, jr., Mottville, Mich	do	1866 and 1868	23.78
	do	do	1868	.17
12823	Jesse Frangboner, Mount Vernon, Mich	do	1866 and 1868	11.06
	do	do	1870 and 1872	4.14
12824	Chas. W. Staley, Mnier, Mich	do	1866 and 1868	151.18
12825	W. H. Borden, Munday, Mich	do	1869 and 1870	6.63
	do	do	1870 and 1872	17.90
15826	Amos Stiff, Mungerville, Mich	do	1866 and 1868	17.56
12827	E. D. Beardsley, Nahma, Mich	do	1870 and 1872	16.90
	do	do	1872 and 1873	6.61
12828	James F. Buffum, New Baltimore, Mich	do	1866	16.09
12829	Livingston Axford, New Baltimore, Mich	do	1866 and 1867	25.06
12830	Peter Schars, jr., New Baltimore, Mich	do	1867 and 1868	75.52
	do	do	1870	5.82
12831	David M. Heath, New Baltimore, Mich	do	1870 and 1872	87.38
12832	Edward H. Jones, Newburgh, Mich	do	1872 and 1874	39.44
12833	Jason R. Squire, Nelson, Mich	do	do	5.92
12834	Sam'l Rice, New Boston, Mich	do	1870 and 1872	13.16
12835	Wm. O. Packard, New Casco, Mich	do	1866 and 1868	47.06
12836	Wm. S. Chase, New Casco, Mich	do	1870 and 1872	32.94
	do	do	1872	2.86
12837	Moses H. White, New Haven Centre, Mich.	do	1866 and 1868	3.26
	do	do	1868 and 1869	1.75
12838	George B. Hiller, New Troy, Mich	do	1872 and 1874	53.36
12839	John Hendges, New Salem, Mich	do	do	8.48
12840	Elisha T. Gardner, Noble Centre, Mich	do	1866 and 1868	9.72
12841	Hiram J. Smith, North Aurelius, Mich	do	1868 and 1870	4.30
12842	Aaron L. Scott, North Branch, Mich	do	1866	5.95
12843	Jacob Gallinger, North Branch, Mich	do	1867	8.48
12844	Irving Weston, North Branch, Mich	do	1867 and 1868	16.95
12845	John H. Button, North Farmington, Mich.	do	1870 and 1872	7.38
12846	Peter Cobb, North Irving, Mich	do	1866 and 1868	10.90
	do	do	1868 and 1870	12.20
12847	John Rossman, North Oxford, Mich	do	1866 and 1868	18.28
	do	do	1868 and 1869	6.41
12848	Wm. Gill, Northport, Mich	do	1866 and 1868	39.36
12849	Asher C. Weeman, North Raisinville, Mich.	do	1870 and 1872	10.92
	do	do	1872 and 1874	9.22
12850	James M. Luther, North Star, Mich	do	1866 and 1868	9.76
12851	Walter D. Whalen, Northville, Mich	do	1866 and 1867	66.70
12852	Edward S. Horton, Northville, Mich	do	1867 and 1868	66.70
12853	L. L. Booth, Norwalk, Mich	do	1866 and 1868	16.26
12854	Wm. W. Tuttle, Norvell, Mich	do	do	75.00
12855	Asher C. Weeman, North Raisinville, Mich.	do	1868 and 1870	5.48
12856	A. V. Rowley, Oakfield, Mich	do	1866 and 1868	25.98
	do	do	1872 and 1874	7.68
	do	do	1870 and 1872	9.52
12857	Silas A. Newcomb, Oakville, Mich	do	1867 and 1868	5.61
	do	do	1872	.69
12858	Giles L. Smith, Orange, Mich	do	1872 and 1874	16.44
12859	Horace C. Turner, Orangeville Mills, Mich.	do	1866 and 1868	32.49
12860	Eli Nichols, Orangeville Mills, Mich	do	1868	6.03
	do	do	1868 and 1869	17.78
12861	Hiram Ball, Ortonville, Mich	do	1866 and 1868	18.50
	do	do	1870 and 1871	25.20
12862	Wm. Algoe, Ortonville, Mich	do	1871 and 1872	16.39
12863	Stowell Dimmick, Oshtemo, Mich	do	1866 and 1867	41.44
12864	Oscar F. Coleman, Oshtemo, Mich	do	1867 and 1868	69.07
12865	Geo. K. Robinson, Ossineke, Mich	do	1872 and 1874	39.38
12866	Daniel Griffith, Otter Creek, Mich	do	1866 and 1868	17.88
12867	George Reed, Otisville, Mich	do	do	32.34
	do	do	1868	7.07
12868	Elnathan Reed, Otto, Mich	do	1866 and 1868	5.28
12869	Isaac L. Peck, Owasso, Mich	do	1872 and 1874	215.99
12870	Leander Millard, Palo, Mich	do	1866 and 1867	14.71
12871	John King, Parkville, Mich	do	1867 and 1868	16.11
12872	Orren Raynor, Partello, Mich	do	1866	1.86
12873	Wm. P. Emmerson, Partello, Mich	do	do	1.96

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12874	Azet N. Chipman, Pavilion, Mich	Compensation of postmasters readjusted, etc.	1866 and 1867	$13.20
12875	Chauncy Allen, Peck, Mich	do	1866 and 1868	12.64
12876	Wm. P. Spaulding, Penn Mine, Mich	do	1868 and 1869	51.22
12877	Edgar D. Richmond, Pent Water, Mich	do	1870	140.37
	do	do	1872 and 1874	251.98
12878	Thomas R. Lathers, Perrinsville, Mich	do	1868 and 1870	13.88
12879	Oscar S. Straight, Perrinsville, Mich	do	1866	9.89
12880	Thomas R. Lathers, Perrinsville, Mich	do	1867 and 1868	29.67
12881	R. H. Titus, Perry, Mich	do	1868 and 1870	20.34
12882	Leonidas M. Marshall, Perry, Mich	do	1870 and 1872	38.08
12883	George Peters, Petersburgh, Mich	do	1871 and 1872	72.88
	do	do	1872 and 1874	172.04
12884	Joseph Paull, Phœnix, Mich	do	1868 and 1870	86.86
	do	do	1870 and 1871	49.36
12885	G. Klockner, Phœnix, Mich	do	1873 and 1874	25.50
12886	David N. Willard, Pine Creek, Mich	do	1866 and 1868	57.02
	do	do	1868 and 1870	21.58
	do	do	1870 and 1872	8.20
	do	do	1872 and 1874	7.20
12887	David O. Everet, Pine Grove Mills, Mich	do	1870 and 1872	39.68
12888	Charlotte C. Sabin, Pipestone, Mich	do	1866 and 1867	22.16
12889	Morris Topping, Plainfield, Mich	do	1866 and 1868	40.48
	do	do	1868 and 1870	18.42
	do	do	1870 and 1872	24.10
	do	do	1872 and 1874	8.38
12896	Lyman Russell, Pool, Mich	do	1866 and 1867	1.79
12891	N. Reynolds, Pool, Mich	do	1867 and 1868	2.89
12992	Thomas Windsor, Port Austin	do	1872	6.33
12893	Lewis K. Brewer, Porter, Mich	do	1872 and 1874	10.58
12894	W. R. Stafford, Port Hope, Mich	do	do	99.04
12895	Isaac P. Wheeler, Pulaski, Mich	do	1866 and 1868	27.20
12896	James F. Tibbitts, Ravenna, Mich	do	do	23.00
12897	Layton Ives, Bedford, Mich	do	1866	8.62
12898	Franklin B. Lowell, Richfield, Mich	do	1872 and 1874	8.56
12889	Nelson H. Walbridge, Richland, Mich	do	1866 and 1868	120.36
12900	Theodore Luce, Richmondville, Mich	do	1868 and 1870	11.94
12901	John Rogner, Richville, Mich	do	do	4.58
	do	do	1870 and 1872	3.28
12902	Peter Sharp, Ridgeway, Mich	do	1866 and 1868	52.20
	do	do	1870 and 1872	46.12
12903	Philip P. Peck, Riley, Mich	do	1866 and 1868	3.18
12904	M. T. Hildreth, Riley, Mich	do	1866	.88
12905	John N. Hildreth, Riley, Mich	do	1872 and 1874	8.60
12906	Solomon Brown, River Raisin, Mich	do	1866 and 1867	29.52
12907	Wm. Hanke, River Raisin, Mich	do	1867 and 1868	13.59
	do	do	1868 and 1870	58.56
12908	Reuben D. Perrine, Rives Junction, Mich.	do	1868 and 1869	15.22
12909	Ayres Stockly, Rockland, Mich	do	1866 and 1868	889.86
	do	do	1868 and 1869	136.17
	do	do	1871 and 1872	101.01
12910	Eliza E. Webster, Rollin, Mich	do	1866 and 1868	32.62
12911	Geo. W. Bond, Rome, Mich	do	1867 and 1868	55.73
12912	Wm. Hulsart, Romeo, Mich	do	1866	49.46
12913	Warren H. Breed, Rose, Mich	do	1866 and 1868	35.00
	do	do	1868 and 1870	10.88
12914	Robert H. Jenks, Saint Clair, Mich	do	1872 and 1874	291.36
12915	Tunis H. Corson, Salem, Mich	do	1868 and 1870	10.96
	do	do	1870 and 1872	11.54
	do	do	1872 and 1874	7.70
12916	A. H. Risdon, Saline, Mich	do	1866 and 1868	81.97
12917	G. A. Cotton, Saranac, Mich	do	do	112.36
12918	Myron W. Scranton, Sault de Ste. Marie, Mich.	do	1869 and 1870	39.94
12919	O. S. Lyon, Sault de Ste. Marie, Mich	do	1868 and 1869	47.30
12920	Myron W. Scranton, Sault de Ste. Marie, Mich.	do	1870 and 1872	209.08
	do	do	1872	54.92
12921	John Friend, Sebewa, Mich	do	1866 and 1868	11.42
	do	do	1870 and 1872	8.00
	do	do	1872 and 1873	11.48
12922	John Mullerweiss, Sebewaing, Mich	do	1870 and 1872	69.42
	do	do	1872 and 1874	46.20
12923	John C. Porter, Seneca, Mich	do	1866 and 1868	6.98
12924	Jacob L. Button, Shepardsville, Mich	do	do	26.80
12625	Jerome J. Studley, Sherwood, Mich	do	1871 and 1872	8.75
12926	Joshua V. Noah, Sidney, Mich	do	1866 and 1868	5.73
12927	Wm. Ellerthorpe, Six Corners, Mich	do	do	14.39
12928	Joseph Walker, Smith's Corners, Mich	do	1870 and 1872	5.20

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12928	Joseph Walker, Smith's Corners, Mich.	Compensation of postmasters readjusted, etc.	1872 and 1874	$5.58
12929	Robert Jameson, Smithville, Mich	do	1866	2.30
12930	Geo. W. Smith, Smithville, Mich	do	1867 and 1868	6.91
	do	do	1870 and 1872	8.72
	do	do	1872 and 1874	6.03
12931	James B. Purdy, Smyrna, Mich	do	1866 and 1868	81.50
	do	do	1868	4.80
12932	Isaac W. Chadwick, Sodus, Mich	do	1866 and 1867	28.88
12933	Moses C. Cate, Solon, Mich	do	1872 and 1874	2.66
12934	Mordecai L. Meads, Somerset, Mich	do	1870 and 1872	17.70
12935	Oliver P. McClure, Spencer's Mill, Mich	do	1868 and 1870	19.38
12936	Mordecai L. Meads, Spring Arbor, Mich.	do	1866 and 1868	17.47
12937	Geo. C. Bassett, Spring Brook, Mich	do	1869 and 1870	18.07
12938	Enos Leek, Spring Mills, Mich	do	1866 and 1868	50.86
	do	do	1870 and 1872	11.14
	do	do	1872 and 1874	20.54
12939	Mrs. Minerva L. Bell, Springport, Mich	do	1866 and 1867	19.91
12940	N. E. Jones, South Riley, Mich	do	1866	10.73
12941	Addison Hayden, Stella, Mich	do	1866 and 1868	23.68
	do	do	1868 and 1870	27.12
	do	do	1870 and 1871	4.75
12942	Samuel B. Purkiss, Stevens Landing, Mich.	do	1866 and 1868	18.88
12943	Edy Baker, Stockbridge, Mich	do	do	94.48
	do	do	1868 and 1870	30.82
	do	do	1870 and 1872	34.24
	do	do	1872	7.14
12944	David N. Rogers, Stockbridge, Mich	do	1872 and 1874	24.70
12945	Joseph Hadley, Stoney Run, Mich	do	do	27.70
12946	Adolphus Magnan, Stronach, Mich	do	1870 and 1872	22.70
12947	Charles Goldie, Summerville, Mich	do	1866 and 1868	35.54
	do	do	1872 and 1874	12.70
12948	Cornelius S. Jackson, Sunfield, Mich	do	1866 and 1867	9.28
12949	Enos M. Miller, Swartz Creek, Mich	do	1866 and 1868	10.76
	do	do	1868 and 1870	15.72
	do	do	1870 and 1872	19.92
	do	do	1872 and 1874	27.80
12950	Palmer Church, Tallmadge, Mich	do	1866	5.11
12951	Alonso M. Patterson, Tallmadge, Mich	do	1866 and 1868	22.35
	do	do	1868 and 1870	4.13
12952	Palmer Church, Tallmadge, Mich	do	1870	.59
	do	do	1872 and 1874	1.66
12953	John J. Vroman, Taylor Centre, Mich	do	1868	1.35
	do	do	1868 and 1870	5.90
	do	do	1872 and 1874	3.24
12954	Francis W. McNalley, Taymouth, Mich.	do	1867 and 1868	5.20
12955	Sherman Moulthrop, Thetford Centre, Mich.	do	1866 and 1868	46.96
	do	do	1868 and 1870	1.84
	do	do	1870 and 1872	2.62
12956	S. V. Thornton, Thornton, Mich	do	1866 and 1868	23.48
12957	W. R. Lambertson, Thornville, Mich	do	1868	4.33
12958	Wm. Chamberlain, Three Oaks, Mich	do	1870	12.21
12959	Jerry A. Tuttle, Tipton, Mich	do	1871 and 1872	4.27
	do	do	1872 and 1873	46.29
12960	T. N. Stringham, Tompkins, Mich	do	1866 and 1868	16.94
12961	Robert Godfrey, Tompkins, Mich	do	1870 and 1872	3.96
12962	Robert Cox, Tompkins, Mich	do	1872	.56
12963	James H. Darling, Tremont Centre, Mich	do	1870 and 1872	14.50
12964	Stephen Goodman, Troy, Mich	do	1866 and 1868	22.94
	do	do	1870 and 1872	31.60
12965	Alfred Pagett, Tyre, Mich	do	do	24.05
	do	do	1872 and 1873	27.38
12966	Jobe S. Bellows, Union, Mich	do	1866 and 1868	45.10
	do	do	1868 and 1869	3.79
12967	Joseph Hartman, Union, Mich	do	1869 and 1870	6.72
12968	Edwin Perry, Union City, Mich	do	1870 and 1872	191.14
12969	Horace C. Marvin, Unionville, Mich	do	1866 and 1868	52.02
12970	John Staley, jr., Unionville, Mich	do	1872	29.01
	do	do	1872 and 1874	33.98
12971	Reuben T. St. John, Utica, Mich	do	1866 and 1868	276.01
12972	Henry C. Walker, Vandalia, Mich	do	do	64.58
12973	Alexander Trotler, Vassar, Mich	do	do	212.77
12974	Morgan L. Gage, Vassar, Mich	do	1866 and 1867	212.77
12975	Abram H. Stansbury, Ventura, Mich	do	do	4.25
12976	Daniel P. Widerman, Ventura, Mich	do	1867 and 1868	7.09
12977	Homer G. Barber, Vermontville, Mich	do	1866 and 1868	62.34
12978	Edward P. Trinby, Vickeryville, Mich	do	1870	2.67
	do	do	1870 and 1872	11.52

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12979	H. S. Rogers, Volinia, Mich	Compensation of postmasters readjusted, etc.	1872 and 1874	$25.62
12980	Wm. A. Heartt, Wahjamega, Mich	do	1866 and 1868	12.68
	do	do	1868 and 1870	24.96
12981	Rufus Skidmore, Wakeshuea, Mich	do	1870	3.88
	do	do	1870 and 1872	35.36
	do	do	1872 and 1874	4.98
12982	John C. Boltz, Waldenburgh, Mich	do	1869 and 1870	3.03
	do	do	1870 and 1872	16.94
12983	Benson Bartlett, Wales, Mich	do	1866 and 1868	52.08
12984	Benj. Brown, Walled Lake, Mich	do	do	53.94
12985	Roswell Wever, Walled Lake, Mich	do	1866 and 1872	35.18
	do	do	1872 and 1874	116.85
12986	John L. Beebe, Warren, Mich	do	1868 and 1869	7.78
12987	Silas E. Halsey, Warren, Mich	do	1869 and 1870	6.58
	do	do	1870 and 1872	20.20
12988	Jonathan Stone, Washington, Mich	do	1866	5.12
12989	Milo M. Davis, Washington, Mich	do	1866 and 1868	24.78
12990	Mary F. Thompson, Waterford, Mich	do	1868	10.82
12991	George Robertson, Waterford, Mich	do	1868 and 1869	37.54
12992	Stephen Siegfried, Waterloo, Mich	do	1866 and 1867	17.43
	do	do	1868 and 1870	18.31
	do	do	1870 and 1872	6.98
	do	do	1872 and 1874	9.66
12993	Aaron Watrous, Watrousville, Mich	do	1866 and 1867	17.94
12994	David G. Philbrick, Watrousville, Mich	do	1867	42.70
12995	Benj. A. Wood, Watrousville, Mich	do	1868	20.95
12996	Orlando H. Newcomb, Waverly, Mich	do	1866 and 1868	40.02
12997	Wm. Lowe, Webster, Mich	do	do	11.22
	do	do	1870 and 1872	14.26
12998	Nathan Ganun, Wellsville, Mich	do	1866 and 1868	25.86
	do	do	1868 and 1870	9.84
	do	do	1870	2.38
12999	Clarence Egerton, West Berlin, Mich	do	1866 and 1868	13.73
13000	B. S. Carey, West Bloomer, Mich	do	do	18.96
	do	do	1868 and 1869	8.00
13001	S. T. Averill, West Climax, Mich	do	1866 and 1868	15.48
13002	Abraham Ott, West Haven, Mich	do	1868 and 1869	10.59
13003	R. H. Angell, West Haven, Mich	do	1871 and 1872	7.35
13004	Byron E. Cole, West Le Roy, Mich	do	1866 and 1868	33.10
13005	Joseph C. Lewis, West Le Roy, Mich	do	1871 and 1872	31.04
13006	Joseph Platte, Westphalia, Mich	do	1866 and 1868	94.30
	do	do	1868 and 1870	65.34
	do	do	1872 and 1873	21.48
13007	Joseph Smitgen, Westphalia, Mich	do	1873 and 1874	35.80
13008	John S. Osborn, West Rivis, Mich	do	1869 and 1870	20.29
13009	Clark Sloan, West Windsor, Mich	do	1866 and 1868	25.64
13010	John Phipps, White Lake, Mich	do	1868	9.88
13011	C. Buchanan, White Lake, Mich	do	1867 and 1868	29.59
13012	Julia A. Owen, Whitmore Lake, Mich	do	1866	10.79
13013	Wm. C. White, Whitneyville, Mich	do	1866 and 1867	11.53
13014	Henry H. Proctor, Whitneyville, Mich	do	1867 and 1868	19.23
13015	D. W. Harwood, White Pigeon, Mich	do	do	100.06
13016	Wm. H. Harrison, Winn, Mich	do	1870	3.09
13017	James S. Skinner, Windsor, Mich	do	1872 and 1873	7.83
	do	do	1869 and 1870	29.52
13018	David Vinton, Williamsburgh, Mich	do	1872 and 1874	8.42
13019	Henry M. Carpenter, Wood Lake, Mich	do	do	20.84
13020	Robert W. Shriner, Woodland, Mich	do	1872	6.84
13021	Milo T. Wheeler, Woodland, Mich	do	1866 and 1868	27.20
13022	Orsamus Lamb, Woodstock, Mich	do	1866 and 1867	6.23
13023	Stephen Porter, Yankee Springs, Mich	do	1866 and 1868	15.18
	do	do	1868 and 1870	6.34
13024	Jonathan R. Bowen, York, Mich	do	1866 and 1868	38.52
13025	Wm. E. Davis, Adams, Minn	do	1871 and 1872	83.58
13026	J. H. Vandyke, Alexandria, Minn	do	1866	6.76
13027	Nathan B. Patterson, Alexandria, Minn	do	1872 and 1873	85.81
13028	Alex. R. E. Kent, Anawank, Minn	do	1868 and 1870	23.98
	do	do	1870 and 1872	11.02
	do	do	1872 and 1874	5.82
13029	Robt. C. Mitchell, Anoka, Minn	do	1867 and 1868	62.87
13030	Reuben Drake, Beaver, Minn	do	1866 and 1868	13.96
13031	A. M. Fridley, Becker, Minn	do	1870 and 1872	62.44
	do	do	1872 and 1874	35.68
13032	Sam'l P. Chandler, Belle Creek, Minn	do	1868 and 1870	14.82
	do	do	1872 and 1874	24.52
13033	Leonard Strenkins, Benton, Minn	do	1872	2.10
13034	Chas. V. Brown, Berlin, Minn	do	1868 and 1869	9.19
13035	Philander Sawyer, Berlin, Minn	do	1869 and 1870	10.88
13036	Christian Closner, Berne, Minn	do	1866 and 1868	14.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13037	James Cooper, Bethel, Minn	Compensation of postmasters readjusted, etc.	1870 and 1872	$11.74
13038	J. R. Davison, Blooming Grove, Minn	do	do	10.46
	do	do	1868 and 1870	16.18
	do	do	1872 and 1874	15.84
13039	Mathilda Garvin, Blue Grass Grove, Minn.	do	1866 and 1867	4.54
13040	Ole Hendrickson, Bratsberg, Minn	do	1870 and 1872	97.94
	do	do	1872 and 1874	44.16
13041	Edwin Teele, Bristol Centre, Minn	do	1866 and 1867	5.24
13042	C. S. Hillman, Brooklyn, Minn	do	1866 and 1868	6.40
	do	do	1868 and 1870	15.14
	do	do	1870 and 1872	45.02
13043	C. W. Lenfest, Brunswick, Minn	do	1868	5.57
13044	Jackson Taylor, Buffalo, Minn	do	1870 and 1872	112.88
13045	Ira A. Conger, Cambridge, Minn	do	1867 and 1868	9.81
	do	do	1870 and 1871	77.50
13046	J. E. Albaugh, Cannon City, Minn	do	1866 and 1868	134.14
13047	John Bailor, Cannon City, Minn	do	1870 and 1872	38.77
	do	do	1869 and 1870	16.48
13048	John Jepson, Cannon City, Minn	do	1868 and 1869	9.88
	do	do	1872	6.00
13049	W. H. Scofield, Cannon Falls, Minn	do	1872 and 1874	83.00
13050	S. G. Canfield, Canfield, Minn	do	1867 and 1868	21.27
	do	do	1870 and 1872	11.00
13051	A. J. Phelps, Cannon River Falls, Minn	do	1866 and 1867	58.46
13052	W. H. Strong, Carimona, Minn	do	1867 and 1868	19.01
	do	do	1868 and 1870	32.84
15053	Hugh Sullivan, Castle Rock, Minn	do	1867 and 1868	31.35
13054	Cornelius O'Connor, Cedar Lake, Minn	do	1870 and 1872	1.86
13055	R. Crandall, Cedarville, Minn	do	1872	2.06
13056	Francis Drugan, Cedarville, Minn	do	1870 and 1872	14.39
13057	Gilbert Shover, Chain Lake Centre, Minn.	do	1866 and 1868	53.74
13058	R. H. Miller, Champlain, Minn	do	1866	3.52
13059	Francis Thorndike, Champlain, Minn	do	1867	4.70
13060	Nicholas Taber, Champlain, Minn	do	1867 and 1868	5.85
	do	do	1872 and 1874	3.44
13061	Lucien Warner, Chaska, Minn	do	1870 and 1872	48.30
13062	Jno. D. Wilcox, Chengwatana, Minn	do	1871 and 1872	94.53
	do	do	1872 and 1873	8.94
13063	James L. Colby, Cherry Grove, Minn	do	1866 and 1868	11.94
13064	Geo. F. Cowing, Chippewa Lake, Minn	do	1870 and 1871	127.05
13065	S. C. Scofield, Christiana, Minn	do	1868 and 1870	30.94
	do	do	1872 and 1874	29.56
13066	Christian Nelson, Clark's Grove, Minn	do	1868 and 1870	18.32
	do	do	1872 and 1874	17.74
13067	Frank S. Everett, Clayton, Minn	do	1873 and 1874	51.12
13068	M. L. Knowlton, Clear Lake, Minn	do	1871 and 1872	10.07
13069	Geo. J. Virtue, Cleveland, Minn	do	1866 and 1868	53.58
	do	do	1868 and 1870	24.11
13070	F. S. Wilson, Cleveland, Minn	do	1870	2.73
	do	do	1872 and 1874	32.18
13071	Chas. Buss, Cold Spring City, Minn	do	1868 and 1870	22.90
13072	E. L. Wright, Concord, Minn	do	1866	10.58
13073	Thos. H. Burdett, Concord, Minn	do	1867 and 1868	31.72
13074	H. Fredenburg, Cooleyville, Minn	do	1866 and 1868	5.24
	do	do	1872	1.21
13075	Patrick B. Corcoran, Corcoran, Minn	do	1872 and 1874	5.10
13076	Jno. P. Furber, Cottage Grove, Minn	do	1870 and 1871	71.03
13077	S. W. Furber, Cottage Grove, Minn	do	1871 and 1872	71.03
13078	Fred'k W. Peake, Crow Wing, Minn	do	1866 and 1868	30.92
13079	Ovid B. Knapp, Darwin, Minn	do	1872 and 1874	32.58
13080	W. D. Brimmer, Dayton, Minn	do	1866 and 1868	35.46
	do	do	1868 and 1870	41.78
13081	Patrick Mohan, Dryden, Minn	do	1866 and 1868	2.70
	do	do	1870 and 1872	4.00
13082	C. L. Lowell, East Prairieville, Minn	do	1867 and 1868	28.71
13083	R. R. Jenness, Elgin, Minn	do	1870 and 1872	43.94
13084	John Blake, Ellicota, Minn	do	1866 and 1868	75.54
13085	A. H. E. Lange, Elysian, Minn	do	do	30.02
13086	Asa M. P. Whittier, Empire City, Minn	do	1868	1.17
13087	H. Eastman, Fair Point, Minn	do	1870 and 1872	37.07
13088	J. H. Kelsey, Fair Point, Minn	do	1872	5.29
13089	James Arnold, Farm Hill, Minn	do	1870	1.21
	do	do	1870 and 1872	9.22
	do	do	1872 and 1874	26.60
13090	N. Ezra Slack, Farmington, Minn	do	1866	12.41
13091	Henry C. Wing, Farmington, Minn	do	1867 and 1868	20.65
13092	Chas. H. Conkey, Fillmore, Minn	do	1866	8.07

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13093	Marvin Egleston, Fillmore, Minn	Compensation of postmasters readjusted, etc.	1872 and 1874	18.02
13094	R. M. Foster, Forestville, Minn	do	1868	3.08
	do	do	1867 and 1868	28.78
13095	Benj. H. Randall, Fort Ripley, Minn	do	1866 and 1867	540.81
13096	H. Simmons, Fort Ridgely, Minn	do	1866 and 1868	270.57
	do	do	1868 and 1870	132.58
13097	Louis Vasaly, Fort Ripley, Minn	do	1868 and 1870	71.40
13098	Chas. H. Clarke, Fort Snelling, Minn	do	1866	24.42
13099	F. S. McDonald, Fort Snelling, Minn	do	1866 and 1868	289.08
	do	do	1868 and 1870	317.78
	do	do	1870 and 1871	47.44
13100	John Frank, Fort Snelling, Minn	do	1871 and 1872	79.09
13101	Edward White, Franconia, Minn	do	1868 and 1870	4.22
13102	Frederick Hall, Frank Hill, Minn	do	1866 and 1868	9.30
	do	do	1868 and 1870	4.98
	do	do	1872 and 1874	10.16
13103	J. Gowaid, Freeborn, Minn	do	1866 and 1867	10.83
13104	D. Southwick, Freeborn, Minn	do	1867 and 1868	27.97
13105	A. A. Munn, Freeborn, Minn	do	1872 and 1873	55.76
13106	George Osborn, Geneva, Minn	do	1870 and 1872	30.44
13107	Adam Stein, Georgetown, Minn	do	1872	8.79
13108	B. B. F. Fetzer, Glasgow, Minn	do	1868 and 1870	11.12
	do	do	1870 and 1872	4.64
13109	A. M. Knight, Glencoe, Minn	do	1870	10.70
13110	Amos De Groat, Glenwood, Minn	do	1871 and 1872	26.09
13111	John Gleason, Goodhue Centre, Minn	do	1868 and 1870	9.76
	do	do	1870 and 1872	20.46
13112	B. F. Langworthy, Grand Meadow, Minn	do	1866 and 1868	14.50
	do	do	1872 and 1874	100.36
13113	Martin Hall, Green Prairie, Minn	do	1870 and 1872	1.46
	do	do	1872 and 1874	7.36
13114	Saphrona Faisey, Greenwood, Minn	do	do	6.92
13115	Stephen N. Frisbie, Guilford, Minn	do	1870 and 1872	19.20
13116	Nathan R. Booth, Hamilton, Minn	do	1866 and 1868	115.23
	do	do	1870 and 1871	21.07
13117	Chas. Wetherville, Hebron, Minn	do	1870 and 1872	5.48
13118	W. F. Weber, Hokah, Minn	do	1867 and 1868	38.34
13119	Fred'k Sherman, Holmes City, Minn	do	1874	5.68
13120	F. N. Goodridge, Houston, Minn	do	1873 and 1874	90.24
13121	G. W. Fanning, Hyde Park, Minn	do	1866 and 1867	6.33
13122	M. W. Morse, Hyde Park, Minn	do	1872 and 1874	2.86
13123	Martin F. Gensmer, Jefferson, Minn	do	1867 and 1868	3.67
	do	do	1870 and 1871	7.05
13124	Wm. W. Strait, Jordan, Minn	do	1872 and 1874	72.48
13125	Wm. A. Johnson, Kellogg, Minn	do	1866 and 1867	7.86
13126	Sarah Johnson, Kellogg, Minn	do	1868	2.08
	do	do	1868 and 1870	10.86
13127	Nathaniel A. Peck, Kelso, Minn	do	1870 and 1872	7.78
	do	do	1872	.87
13128	Freeman Colby, Kelso, Minn	do	1872 and 1874	6.04
13129	Edward Slee, Kenyon, Minn	do	1870 and 1872	61.24
	do	do	1872 and 1874	73.96
13130	Elijah Porter, Lake City, Minn	do	1866 and 1867	32.93
13131	Micah R. Merrill, Lake City, Minn	do	1867 and 1868	164.37
13132	Wm. W. Morgan, Lakeland, Minn	do	1870 and 1872	35.34
13133	Orville C. Hart, Lake Lillian, Minn	do	1872 and 1874	8.58
13134	David C. Johnson, Lakeville, Minn	do	1866 and 1867	4.40
13135	Gustavus F. Ackley, Lakeville, Minn	do	1867 and 1868	10.62
13136	Solomon W. Judge, Lamoille, Minn	do	1869 and 1870	1.27
13137	S. Flint, Langola, Minn	do	1866 and 1868	6.54
13138	Sam Sherman, Leavenworth, Minn	do	1870 and 1872	7.06
	do	do	1872 and 1873	19.83
13139	Albion Barnard, Leech Lake, Minn	do	1871 and 1872	14.39
13140	Walter B. Boyd, Little Canada, Minn	do	1866 and 1868	14.34
	do	do	1870 and 1872	19.94
	do	do	1872 and 1874	2.82
12141	David A. Lydiard, Long Lake, Minn	do	do	23.42
13142	Solomon S. Whipps, Lydia, Minn	do	1866	1.15
13143	James R. Harris, McCawleyville, Minn	do	1871 and 1872	14.14
13144	B. G. Yates, Madelia, Minn	do	1870 and 1872	84.78
	do	do	1872 and 1874	43.88
13145	David F. Spalding, Maine Prairie, Minn	do	1866 and 1867	27.60
13146	Carlos Caswell, Manannah, Minn	do	1870 and 1871	6.80
13147	Ziba Caswell, Manannah, Minn	do	1872	2.27
13148	H. C. Fridley, Manomin, Minn	do	1866 and 1868	6.78
	do	do	1870 and 1872	20.78
13149	Joseph Thornton, Maple Glen, Minn	do	1872 and 1873	4.73
13150	Solomon W. Yokley, Maple Plain, Minn	do	1866 and 1868	23.82
13151	R. Taylor, Mapleton, Minn	do	1868 and 1870	29.38

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13152	Alfred Wilson, Merton, Minn	Compensation of postmasters readjusted, etc.	1866 and 1868	$12.76
	do	do	1868 and 1870	15.58
	do	do	1870 and 1872	1.68
	do	do	1872 and 1874	7.70
13153	Frank Weber, Millerville, Minn	do	1872	1.91
13154	M. Kotschevar, Millerville, Minn	do	1872 and 1874	13.39
13155	John Henry, Millville, Minn	do	1871 and 1872	10.42
13156	Robert Pike, Minnesota City, Minn	do	1866	1.04
13157	Edgar Chapman, Minnesota City, Minn	do	1866 and 1868	6.27
	do	do	1871 and 1872	22.59
13158	Saml. D. Grant, Minnetrista, Minn	do	1866 and 1868	21.42
	do	do	1868 and 1869	1.24
13159	G. L. Vance, Money Creek, Minn	do	1871 and 1872	11.68
13160	Chas. D. Adams, Morristown, Minn	do	1866 and 1868	40.10
13161	Evan Morgan, Moscow, Minn	do	1866 and 1867	.64
13162	J. A. Eberhard, Mound Prairie, Minn	do	1871 and 1872	1.54
13163	Peter Wilkins, New Auburn, Minn	do	1874	7.50
13164	Hilkiah Lilley, New Hartford, Minn	do	1870 and 1872	3.76
13165	J. H. Hugamin, Newport, Minn	do	1866 and 1868	25.30
	do	do	1868 and 1870	8.16
13166	Benj. F. Huntley, North Branch, Minn	do	1870	1.13
	do	do	1870 and 1872	4.90
13167	Hiram Paris, North Warren, Minn	do	1866 and 1868	7.06
	do	do	1868 and 1869	5.18
13168	Joseph Streiff, Oak Dale, Minn	do	1872 and 1874	12.81
13169	Chas. Adsit, Oak Glen, Minn	do	1869 and 1870	42.75
13170	Franklin Whitney, Oak Grove, Minn	do	1866 and 1868	7.20
	do	do	1872 and 1874	1.90
13171	J. E. Herrick, Oak Springs, Minn	do	do	1.44
13172	Fritz Oberle, Oberle's Corners, Minn	do	do	1.76
13173	L. H. Merritt, Oneota, Minn	do	1867 and 1868	42.43
13174	Zephirin Demenles, Osseo, Minn	do	1869 and 1870	11.31
	do	do	1870 and 1872	36.02
13175	Phineas Phelps, Otsego, Minn	do	1871 and 1872	3.95
	do	do	1872	3.49
13176	J. H. Williams, Ottawa, Minn	do	1866 and 1868	52.81
13177	Chas. Needam, Ottawa, Minn	do	1873 and 1874	41.42
13178	Chas. Suffreas, Pickwick, Minn	do	1866 and 1868	17.48
	do	do	1872 and 1873	7.42
	do	do	1868 and 1870	21.10
13179	A. D. Cash, Pike Rapids, Minn	do	1870 and 1872	10.96
	do	do	1872 and 1874	3.48
13180	Andrew More, Pilot Grove, Minn	do	1868 and 1870	4.52
	do	do	1870 and 1872	34.64
	do	do	1872 and 1874	27.20
13181	Erastus F. Crocker, Pine Bend, Minn	do	1866 and 1868	19.20
	do	do	1870 and 1871	13.31
13182	James C. Sanborn, Pine Bend, Minn	do	1871 and 1872	13.31
13183	Norton J. Bump, Pleasant Prairie, Minn	do	do	3.04
	do	do	1874	5.08
13184	Wm. P. Conkey, Preston, Minn	do	1870 and 1872	122.26
	do	do	1872 and 1873	147.22
13185	Burr Derrell, Quincy, Minn	do	1866 and 1868	10.00
	do	do	1868 and 1870	15.96
	do	do	1870 and 1872	30.04
13186	Leonard Peck, Raven Stream, Minn	do	1866 and 1868	19.60
	do	do	1870 and 1872	24.74
	do	do	1872 and 1874	26.34
13187	Jas. A. Dunsmore, Richfield, Minn	do	1866 and 1868	11.44
13188	J. N. Richardson, Richfield, Minn	do	1872 and 1874	17.54
13189	Thomas Clark, Rich Valley, Minn	do	1866 and 1867	6.25
13190	Jonathan S. E. Stevens, Ridgeway, Minn.	do	do	6.25
13191	Jule A. Violet, Rocky Run, Minn	do	1866 and 1868	31.70
	do	do	1868 and 1870	4.74
	do	do	1870 and 1871	3.25
13192	H. C. Jones, Rollingstone, Minn	do	1866 and 1868	13.32
	do	do	1868 and 1869	7.10
13193	Oliver Webb, Roscoe, Minn	do	1866 and 1868	12.72
	do	do	1869	6.79
13194	W. S. Hardick, Rosemount, Minn	do	1866 and 1868	58.96
	do	do	1869 and 1870	62.97
13195	H. M. Loomer, Rutland, Minn	do	1872 and 1873	14.09
13196	G. W. Wilson, Saint Augusta, Minn	do	1866 and 1867	12.01
13197	Henry Krebs, Saint Augusta, Minn	do	1868	4.00
	do	do	1870 and 1872	13.80
13198	Martin Williams, Saint Peter, Minn	do	1866 and 1868	417.12
13199	G. J. Sheldon, San Jacinto, Minn	do	do	3.60
	do	do	1868 and 1870	6.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13199	G. J. Sheldon, San Jacinto, Minn	Compensation of postmasters readjusted, etc.	1870 and 1871	$1.06
13200	Sam'l Simonton, Sauk Centre, Minn	do	1872 and 1874	191.08
13201	Thos. P. Dixon, Saratoga, Minn	do	1866 and 1868	87.86
13202	Alvin Englebrecht, Shelbyville, Minn	do	1868 and 1870	36.96
	do	do	1870 and 1872	58.10
13203	E. P. Skinner, Shell Rock, Minn	do	1866 and 1868	48.84
	do	do	1870 and 1871	4.59
13204	Nels Olsen, Spring Grove, Minn	do	1870 and 1872	72.02
	do	do	1872 and 1874	127.28
13205	F. W. Lenz, Spring Hill, Minn	do	do	2.68
13206	Willard Allen, Spring Valley, Minn	do	1866	5.64
13207	Oscar Roos, Taylor's Falls, Minn	do	1868	10.02
13208	J. W. Chapman, Union Centre, Minn	do	1870 and 1872	5.28
	do	do	1872 and 1874	1.76
13209	H. M. Humphrey, Union Lake, Minn	do	1866 and 1867	7.38
13210	Louis Gotthelf, Waconia, Minn	do	1868	5.22
	do	do	1870 and 1872	39.63
13211	Albert Kohler, Waconia, Minn	do	1872	5.66
13212	W. R. Brown, Wanamingo, Minn	do	1866 and 1867	93.25
13213	Wm. F. Sloan, Warsaw, Minn	do	do	19.52
13214	Geo. T. Emerson, Warsaw, Minn	do	1867	10.33
13215	John B. Gowen, Warsaw, Minn	do	1870 and 1872	11.36
13216	Henry Hillman, Watah, Minn	do	1866 and 1868	5.72
13217	Jacob V. Sharp, Watson Creek, Minn	do	1868 and 1870	7.66
	do	do	1870 and 1871	2.28
13218	Mrs. Salome Kyte, Waverly Wells, Minn.	do	1873 and 1874	88.98
13219	Wm. Barry, West Albany, Minn	do	1868 and 1870	11.74
	do	do	1870 and 1872	5.02
13220	James C. Murray, White Bear Lake, Minn.	do	1866 and 1868	24.88
	do	do	1868 and 1870	7.66
13221	Henry Mohr, Winnebago Agency, Minn	do	1871 and 1872	19.31
	do	do	1872 and 1873	14.91
13222	John Baker, Winsted Lake, Minn	do	1873 and 1874	3.67
13223	Levi C. Farrar, Wiscoy, Minn	do	1866 and 1868	7.50
	do	do	1870 and 1872	2.30
	do	do	1872 and 1873	1.14
13224	Geo. W. Morse, Witoka, Minn	do	1866 and 1867	25.32
13225	Geo. W. Sylvester, Woodland, Minn	do	1866 and 1868	9.41
13226	James Slocum, jr., Young America, Minn.	do	1870 and 1872	40.46
	do	do	1872 and 1873	16.63
13227	J. H. Ackerman, Young America, Minn	do	1873 and 1874	13.78
13228	John Bartenger, Zions, Minn	do	1870 and 1872	8.04
13229	Cammie Fairbanks, Americus, Miss	do	1872	3.99
13230	James M. Redden, Allen's Store, Miss	do	1870 and 1872	9.40
13231	S. P. Holly, Airmount, Miss	do	do	16.54
13232	B. B. Seiner, Baldwin, Miss	do	1870 and 1871	73.90
13233	W. W. Mitchell, Batesville, Miss	do	1872 and 1874	83.96
13234	Nathan Haber, Bahala, Miss	do	1870 and 1872	122.95
13235	E. H. Reno, Bay Springs, Miss	do	1872 and 1874	8.66
13236	Fred. Attereave, Black Hawk, Miss	do	1872	12.56
13237	J. Alexander, Bolton's Depot, Miss	do	1873 and 1874	56.67
13238	Samuel J. Proctor, Brandon, Miss	do	1868 and 1870	113.60
	do	do	1870 and 1872	744.16
13239	Rebecca Cockwell, Brookville, Miss	do	1868 and 1870	68.81
13240	Presley Ingham, Byhalia, Miss	do	1870 and 1872	32.38
13241	R. C. Hansbrough, Carrollton, Miss	do	1872 and 1873	154.85
13242	T. Wigley, Carrollton, Miss	do	1873 and 1874	154.85
13243	Thomas Shelton, Chesterville, Miss	do	1870 and 1872	56.66
	do	do	1872 and 1873	29.38
13244	Mary S. Packwood, China Grove, Miss	do	1868 and 1870	39.26
	do	do	1870	.78
13245	Lemuel J. Quin, China Grove, Miss	do	1871 and 1872	3.11
	do	do	1872 and 1874	32.92
13246	H. Moseley, Clinton, Miss	do	1868 and 1869	39.92
13247	Harriet J. Carey, Clinton, Miss	do	1869 and 1870	30.69
13248	Thaddeus Boerne, Columbia, Miss	do	1870 and 1872	25.17
13249	Mrs. Charity A. Davenport, Coonewar, Miss.	do	do	17.73
	do	do	1872 and 1874	7.24
13250	A. D. Jones, Corinth, Miss	do	do	369.05
13251	Christian Letwinger, Crystal Springs, Miss.	do	1873 and 1874	68.51
13252	G. R. Wallis, Eggs Point, Miss	do	1872 and 1873	24.12
13253	Dennis Winter, Elliott, Miss	do	1870 and 1872	19.40
13254	C. S. Jackson, Enterprise, Miss	do	1872 and 1873	69.40
13255	Martha H. Fleetwood, Fearn Springs, Miss.	do	1870 and 1872	16.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13255	Martha H. Fleetwood, Fearn Springs, Miss.	Compensation of postmasters readjusted, etc.	1872 and 1874	$26.14
13256	Hiram Eastland, Forest, Miss	do	1871 and 1872	65.17
13257	James Patterson, Greenborough, Miss	do	1872 and 1874	31.50
13258	M. V. Whittington, Hickory Flat, Miss	do	1870 and 1872	71.66
	do	do	1872 and 1874	49.64
13259	Wm. McClenachan, Hillsborough, Miss	do	1870 and 1872	54.52
	do	do	1872 and 1874	51.20
13260	P. Bonney, Holmesville, Miss	do	1868 and 1869	36.18
13261	Wm. T. Arbuckle, Horn Lake, Miss	do	1873 and 1874	83.10
13262	A. Cathey, Jacinto, Miss	do	1870	4.45
13263	J. R. Lynch, Jonesborough, Miss	do	1870 and 1872	20.86
	do	do	1872 and 1874	29.00
13264	A. L. Fortune, Lafayette Springs, Miss	do	1870 and 1872	15.16
15265	Wm. G. Tyler, Magnolia, Miss	do	1870	31.28
	do	do	1870 and 1871	56.44
13266	J. E. Platt, Marion Station, Miss	do	1871 and 1872	47.21
	do	do	1872 and 1873	6.58
13267	Lee Jarvis, New Albany, Miss	do	1873 and 1874	39.07
13268	R. J. Buntin, Oakland, Miss	do	1868 and 1869	32.80
13269	Thomas P. Gooch, Oakland, Miss	do	1871 and 1872	121.57
13270	W. S. Dodson, Pascagoula, Miss	do	1870 and 1872	198.76
	do	do	1872 and 1874	77.76
13271	George W. Brown, Pearlington, Miss	do	1870 and 1872	17.20
13272	Silas L. St. John, Pickens Station, Miss	do	1872 and 1874	23.04
13273	Mrs. Mary O'Connell, Pope Depot, Miss	do	1872 and 1873	31.60
13274	G. J. Stovall, Poplar Creek, Miss	do	1871 and 1872	12.67
13275	N. C. Smith, Port Gibson, Miss	do	1868 and 1870	181.36
12276	Hosea H. Porter, Pontotoc, Miss	do	do	56.44
13277	N. C. Reid, Saltillo, Miss	do	do	36.02
	do	do	1870 and 1872	135.64
	do	do	1872 and 1873	32.49
12278	Milton A. Steele, Sarepta, Miss	do	1871 and 1872	13.59
	do	do	1872	7.32
13279	Eugene S. Keene, Sortortia, Miss	do	1870 and 1872	149.06
13280	David Sparks, Shannon, Miss	do	1873 and 1874	56.86
13281	Simon Lehman, Union Church, Miss	do	1871 and 1872	73.52
13282	Geo. Barrows, Wesson, Miss	do	1872	31.34
13283	John T. Moss, Wesson, Miss	do	1870 and 1872	219.41
13284	T. M. Berry, Westville, Miss	do	1872 and 1874	6.40
13285	Kate J. Gibson, Williamsburgh, Miss	do	1868 and 1870	42.28
	do	do	1870 and 1872	37.32
13286	Wm. McCulloch, Yocong, Miss	do	do	3.48
13587	Emanuel Urban, Abernathy, Mo	do	1868 and 1870	14.96
	Emanuel Urban, Abernathy, Mo	do	1870 and 1872	52.80
	do	do	1872 and 1874	17.58
13288	W. Folker, Acasto, Mo	do	1866 and 1868	5.78
	do	do	1870 and 1872	13.04
13289	S. B. Adams, Ada, Mo	do	1870	6.77
13290	Rob't Frazier, Akron, Mo	do	1866 and 1868	39.26
	do	do	1868 and 1870	6.76
13291	James Haworth, Alba, Mo	do	1871 and 1872	24.29
	do	do	1872 and 1873	6.44
13292	Hudson M. Rice, Albany, Mo	do	1866	16.05
13293	H. Johnson, Albany, Mo	do	1866 and 1868	123.06
	do	do	1868 and 1869	35.51
13294	O. C. Dawson, Allendale, Mo	do	do	13.56
13295	Joseph Hammer, Allendale, Mo	do	1871 and 1872	5.99
	do	do	1872 and 1876	33.34
13296	F. Wengler, Allenton, Mo	do	1866 and 1868	96.70
13297	Sam'l Wilson, Alpha, Mo	do	do	25.44
13298	Geo. Mueller, Altenburgh, Mo	do	1870 and 1872	57.24
13299	W. F. Wilson, Americus, Mo	do	1872 and 1873	10.86
13300	Sam'l Turner, Arno, Mo	do	1870 and 1872	10.20
	do	do	1872 and 1874	21.16
13301	H. S. Wilhelm, Arrow Rock, Mo	do	1868 and 1869	51.35
13302	J. F. G. Bentley, Ash Grove, Mo	do	1871 and 1872	22.14
13303	R. S. Orr, Ashley, Mo	do	1868 and 1869	27.24
13304	M. W. Houston, Ashley, Mo	do	1869 and 1870	34.54
	do	do	1872 and 1874	60.24
13305	Wm. F. Williamson, Atlanta, Mo	do	1870 and 1872	92.42
	do	do	1872 and 1873	51.61
13306	Fr. Wencker, Augusta, Mo	do	1866 and 1868	30.20
	do	do	1868 and 1870	49.36
	do	do	1870 and 1872	42.32
12307	M. Lepp, Avoca, Mo	do	1866 and 1868	19.86
	do	do	1868 and 1870	17.28
12308	J. M. Boyd, Avon, Mo	do	1870 and 1872	11.04
	do	do	1872 and 1874	10.91

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13309	Elijah M. Strauser, Ayersville, Mo	Compensation of postmasters readjusted, etc.	1872	$4.46
	do	do	1871 and 1872	7.42
13310	Frank Stowner, Bailey's Creek, Mo	do	1866 and 1868	21.90
13311	Louis Strothkamp, Ballwin, Mo	do	do	23.49
	do	do	1868 and 1870	13.96
	do	do	1870 and 1872	35.28
	do	do	1872 and 1874	13.78
13312	Amos Baker, Barnard, Mo	do	1870 and 1872	7.96
	do	do	1872 and 1874	11.96
13313	H. A. Kleinbecker, Beaufort, Mo	do	1868 and 1869	10.71
13314	Henry Lonstromberg, Beaufort, Mo	do	1870	3.57
13315	C. F. Moore, Bell Air, Mo	do	1866 and 1867	20.76
13316	W. J. Wyan, Bell Air, Mo	do	1867 and 1868	34.61
	do	do	1868 and 1870	50.12
	do	do	1870 and 1872	35.48
	do	do	1872 and 1874	14.00
13317	David C. Johnston, Benbow, Mo	do	1869 and 1870	6.71
	do	do	1870 and 1872	9.22
	do	do	1872 and 1874	14.18
13318	Chas. Knight, Bethel, Mo	do	1866 and 1868	19.74
13319	Allred Lindsey, Black Oak Point, Mo	do	1870 and 1872	10.88
13320	Robt. Blacknell, Blacknell Station, Mo	do	1868 and 1870	28.92
	do	do	1870 and 1871	6.16
13321	Robt. Searcy, Blue Eagle, Mo	do	1871 and 1872	31.78
	do	do	1872 and 1873	23.08
13322	David Mock, Blue Springs, Mo	do	1870 and 1872	40.90
	do	do	1872 and 1874	18.24
13323	J. H. Koppelman, Boeuf Creek, Mo	do	1868 and 1870	18.52
13324	Geo. W. Drake, Bolivar, Mo	do	1866 and 1868	104.16
13325	M. Chapman, Bourbon, Mo	do	1866	.69
13326	Andrew J. Lamar, Bourbon, Mo	do	1866 and 1868	4.86
13327	Geo. F. Bowers, Bower's Mills, Mo	do	1868 and 1869	16.05
13328	Chas. C. Brown, Bower's Mills, Mo	do	1870	5.35
	do	do	1870 and 1872	43.87
13329	A. C. Austin, Boyd, Mo	do	1868 and 1870	7.16
	do	do	1870 and 1872	13.33
13330	Saml. Russell, Breckenridge, Mo	do	1867 and 1868	39.61
13331	W. H. Collins, Bridgeton, Mo	do	1868 and 1869	27.97
13332	Jacob Blum, Bridgeton, Mo	do	1872 and 1874	10.31
13333	Edw. E. Treadway, Bridgeton, Mo	do	1866 and 1867	32.31
13334	A. J. Willson, Brumley, Mo	do	1866 and 1868	24.40
	do	do	1868	.45
13335	James Thompson, Brumley, Mo	do	1869 and 1870	2.71
	do	do	1870 and 1872	5.90
13336	Jno. J. Alregg, Brunswick, Mo	do	1869 and 1870	208.80
13337	Mathew Pare, Buffalo, Mo	do	1866 and 1868	68.90
	do	do	1868 and 1869	49.86
13338	Zenas L. Slavens, Buffalo, Mo	do	1870	16.62
13339	R. Bush, Bushberg, Mo	do	1870 and 1872	143.68
13340	W. Wilson, Bynumville, Mo	do	1868 and 1870	3.32
	do	do	1870 and 1872	10.84
	do	do	1872 and 1873	10.99
13341	Saml. Boyse, Byron, Mo	do	1866 and 1868	6.44
	do	do	1868 and 1870	9.52
	do	do	1870 and 1872	15.24
	do	do	1872 and 1874	16.46
13342	Adolphus Boyer, Cadet, Mo	do	1871 and 1872	98.57
13343	Wm. Cohagan, Cahoka, Mo	do	1866	11.93
13344	John Jordan, Cahoka, Mo	do	1867 and 1868	35.80
13345	Geo. W. Bostic, Cahoka, Mo	do	1870 and 1872	119.28
13346	James Clark, Cainsville, Mo	do	1868 and 1869	6.21
13347	Joseph H. Burrows, Cainsville, Mo	do	1869 and 1870	7.34
13348	James M. Bay, Calvy, Mo	do	1866 and 1868	14.74
	do	do	1872 and 1874	14.26
13349	Silas P. McMillan, Callao, Mo	do	1871 and 1872	38.06
13350	James W. Foster, Camden, Mo	do	1872 and 1874	58.32
13351	Thos. Hale, Camden Point, Mo	do	1870 and 1872	26.48
13352	E. L. Sandlin, Cane Creek, Mo	do	1871	30.19
13353	D. F. Killam, Cap au Gris, Mo	do	1866	4.96
13354	James A. Tilford, Cap au Gris, Mo	do	1866 and 1868	22.49
	do	do	1868 and 1869	8.43
13355	Wm. H. Godlove, Cap au Gris, Mo	do	1869 and 1870	20.14
	do	do	1870 and 1871	10.90
13356	J. H. Alexander, Cap au Gris, Mo	do	1871 and 1872	18.18
13357	Louis F. Klosterman, Cape Girardeau, Mo.	do	1866 and 1868	413.66
13358	James S. Day, Capps Creek, Mo	do	1870 and 1872	96.08
13359	Salisbury F. Rosse, Carbon Hill, Mo	do	1871 and 1872	45.49
13360	Amos Carpenter, Carpenter's Store, Mo	do	1866 and 1868	3.25

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13361	F. Bell, Caruthersville, Mo	Compensation of postmasters readjusted, etc.	1872 and 1874	$33.48
13362	John Gibson, Carrollton, Mo	do	1869 and 1870	118.20
13363	James W. Partlow, Case, Mo	do	1866 and 1868	3.84
13364	S. B. Roll, Castle Rock, Mo	do	1866	13.09
13365	John H. Diercks, Castle Rock, Mo	do	1867 and 1868	39.28
	do	do	1868 and 1870	10.38
	do	do	1870 and 1871	7.89
13366	L. A. Lambert, Castle Rock, Mo	do	1871 and 1872	5.89
	do	do	1872 and 1874	37.80
13367	John H. Moore, Cassville, Mo	do	1866	78.79
13368	John H. Meyer, Cedar Fork, Mo	do	1870 and 1872	4.06
	do	do	1872 and 1874	7.98
13369	Thos. H. Byrd, Charleston, Mo	do	1868 and 1869	99.66
13370	F. J. Jecko, Charleston, Mo	do	1869 and 1870	56.06
13371	Wm. O. Thomas, Cheltenham, Mo	do	1870 and 1872	23.11
13372	N. H. Rodgers, Cherry Box, Mo	do	1870	1.41
13373	John F. Price, Civil Bend, Mo	do	1868 and 1870	14.98
	do	do	1872 and 1874	38.28
13374	Edward Spencer, Claysville, Mo	do	1867 and 1868	27.55
13375	J. B. Simmons, Coatesville, Mo	do	1872	45.13
13376	F. R. Goetze, Cole Camp, Mo	do	1866 and 1867	21.72
13377	W. C. Redd, College Mound, Mo	do	1869 and 1870	24.56
	do	do	1870 and 1871	85.51
13378	Thos. H. Trussell, Coloma, Mo	do	1870 and 1872	22.84
	do	do	1872 and 1874	40.58
13379	T. P. McMurray, Colony, Mo	do	1868 and 1870	16.28
	do	do	1870 and 1872	28.10
	do	do	1872 and 1874	16.64
13380	L. T. Hyatt, Columbus, Mo	do	1870 and 1872	31.40
13381	I. F. Connor, Connor's Mills, Mo	do	1868 and 1870	15.30
	do	do	1872 and 1874	3.54
13382	J. Huffman, Cottonwood Point, Mo	do	1871 and 1872	2.79
	do	do	1872 and 1874	35.18
13383	Edgar G. Richmond, Craig, Mo	do	do	130.39
13384	J. B. Halbert, Cross Timbers, Mo	do	1868 and 1870	19.32
	do	do	1872 and 1873	2.39
13385	Anton Sommer, Dalhoff, Mo	do	1871 and 1872	18.99
13386	James Summers, Deerfield, Mo	do	1872	2.02
13387	Wm. Dent, Dent Station, Mo	do	1866 and 1868	22.12
13388	A. Joeckel, Des Peres, Mo	do	do	12.68
	do	do	1868 and 1870	45.90
	do	do	1870 and 1872	10.06
13389	Andrew Bopp, Des Peres, Mo	do	1872 and 1874	.32
13390	Wm. Knorpp, De Soto, Mo	do	1868 and 1870	358.86
	do	do	1870 and 1872	265.24
13391	G. B. Glendenning, De Witt, Mo	do	1866 and 1868	81.68
13392	A. H. Eaton, Dry Creek, Mo	do	1866 and 1868	30.90
	do	do	1868 and 1869	6.54
13393	John Wildfoug, Dundee, Mo	do	1870 and 1872	15.42
13394	W. C. Wilkerson, Dunkle's Store, Mo	do	1871 and 1872	8.45
13395	Jas. L. Downing, Eaglesville, Mo	do	1868 and 1870	56.12
13396	J. W. Craig, Economy, Mo	do	1868 and 1869	2.89
13397	Saml. H. Agnew, Edina, Mo	do	1866 and 1868	91.10
13398	Wm. F. Granaway, Edinburgh, Mo	do	do	57.70
13399	Edw. K. O'Brien, Egypt Mills, Mo	do	1870 and 1872	22.96
	do	do	1872 and 1874	14.18
13400	H. S. Weber, Ellisville, Mo	do	do	6.76
13401	Geo. H. Roland, El Dorado, Mo	do	1869 and 1870	21.55
13402	W. W. Kennedy, Elmwood, Mo	do	1870 and 1872	36.58
	do	do	1872 and 1874	49.38
13403	Thomas Thomas, Eureka, Mo	do	do	37.50
13404	Chas. W. Gardner, Fairfield, Mo	do	1874	4.16
13405	Calvin S. Stiles, Fair Grove, Mo	do	1866 and 1867	11.30
13406	John E. Henry, Fairmount, Mo	do	1866 and 1868	119.18
	do	do	1868 and 1869	9.99
13407	James Starr, Fairmount, Mo	do	1869 and 1870	13.70
13408	Jno. R. Swain, Farley, Mo	do	1866 and 1868	9.28
13409	Henry Carleton, Farmington, Mo	do	1869 and 1870	48.53
	do	do	1870 and 1872	146.52
	do	do	1872 and 1874	89.86
13410	A. J. Morgan, Fayetteville, Mo	do	1868 and 1869	69.33
	do	do	1870 and 1872	116.70
	do	do	1872 and 1874	114.00
13411	H. H. Knippenberg, Femme Osage, Mo	do	1866 and 1868	40.48
	do	do	1868 and 1870	24.08
	do	do	1870 and 1872	35.40
13412	Henry Poth, Fenton, Mo	do	do	19.38
	do	do	1872	3.10
13413	Aaron Cole, Fillmore, Mo	do	1870 and 1872	96.32

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13414	Wm. Riddle, Flint Hill, Mo	Compensation of postmasters readjusted, etc.	1870 and 1872	$28.46
13415	John P. Goss, Florida, Mo	do	1868 and 1870	27.04
	do	do	1870 and 1872	32.18
	do	do	1872 and 1874	42.80
13416	Louis R. Brand, Florisant, Mo	do	1866 and 1868	85.40
13417	Geo. Weber, Forest City, Mo	do	do	111.38
	do	do	1868 and 1870	40.24
	do	do	1870 and 1872	92.86
13418	Wm. Marlin, Forkner Hill, Mo	do	1866 and 1867	4.64
13419	Scott Atkins, Forkner Hill, Mo	do	1867 and 1868	8.55
13420	Geo. W. McElyea, Four Mile, Mo	do	1870 and 1872	41.10
	do	do	1872 and 1874	25.42
13421	Calvin Steffens, Fox Creek, Mo	do	1870 and 1872	8.32
13422	G. R. Turner, Franklin, Mo	do	1866 and 1868	139.12
	do	do	1868	5.80
13423	Wm. Geiser, Fredericksburgh, Mo	do	1871 and 1872	6.79
13424	N. J. Berryman, Fredericktown, Mo	do	do	85.35
13425	Anderson Ward, Fredie, Mo	do	1870 and 1872	4.76
13426	Wm. Cane, Freedom, Mo	do	1868 and 1870	48.94
13427	Geo. E. Hale, Freeman, Mo	do	1870 and 1874	61.06
13428	Fred. Anbuchon, French Village, Mo	do	1870 and 1872	8.08
	do	do	1872 and 1874	12.72
13429	Thos. Patton, Fulton, Mo	do	1866 and 1867	104.58
13430	Jesse R. Hallford, Galbraith's Store, Mo	do	1870 and 1872	8.54
13431	John C. Brown, Garden City, Mo	do	1873 and 1874	2.01
13432	H. C. Hall, Gayoso, Mo	do	1872	32.44
	do	do	1872 and 1874	47.28
13433	Isaiah Jones, Gilead, Mo	do	1869 and 1870	15.03
	do	do	1871 and 1872	38.84
13434	Jos. D. Keebaugh, Glasgow, Mo	do	1871	183.97
13435	E. B. Cunningham, Glasgow, Mo	do	1871 and 1872	443.85
13436	H. Chattin, Glenwood, Mo	do	1874	.22
13437	Zilda A. Morton, Gooche's Mill, Mo	do	1866 and 1867	20.15
13438	G. F. Bram, Grant's Hill, Mo	do	1866	3.68
13439	Chris. R. Dawson, Grant's Hill, Mo	do	1867 and 1868	11.04
13440	J. T. Selby, Grassy Creek, Mo	do	1866 and 1868	26.74
	do	do	1868 and 1870	12.26
	do	do	1870	1.53
13441	Robt. Hundhausen, Gray's Summit, Mo	do	1870 and 1872	25.41
13442	Abram McGuire, Green Castle, Mo	do	1866 and 1868	70.14
	do	do	1868 and 1869	12.06
13443	Asahel Jones, Green Castle, Mo	do	1869 and 1870	19.30
	do	do	1872 and 1874	38.27
13444	Temple E. Bell, Greenfield, Mo	do	1873 and 1874	66.42
13445	Edw. Foley, Green Ridge, Mo	do	1868 and 1869	14.22
13446	Jno. R. Thomas, Green Ridge, Mo	do	1870	4.74
13447	G. P. Herndon, Greenton, Mo	do	1872 and 1874	37.02
13448	G. W. Gatlin, Green Top, Mo	do	1868 and 1869	27.09
13449	Geo. B. Green, Grubville, Mo	do	1866 and 1868	21.84
	do	do	1868 and 1870	12.84
	do	do	1870 and 1872	18.24
	do	do	1872 and 1874	11.88
13450	Jas. S. Gleaves, Guilford, Mo	do	1866 and 1867	22.54
13451	Alex. Floyd, Guilford, Mo	do	1867 and 1868	22.54
	do	do	1870 and 1872	36.52
	do	do	1872 and 1874	50.24
13452	John Askren, Half Way, Mo	do	1869 and 1870	16.92
	do	do	1870 and 1872	14.22
	do	do	1872 and 1873	5.89
13453	Byrd M. Fleming, Halleck, Mo	do	1868 and 1869	16.02
13454	Bart Snowden, Hardin, Mo	do	1867 and 1868	7.57
13455	Chas. Harkins, Hardford, Mo	do	1866 and 1868	27.60
	do	do	1870	4.07
13456	Wm. Young, Hartville, Mo	do	1869 and 1870	17.77
13457	Jno. B. Robinson, Havana, Mo	do	1870 and 1872	113.42
	do	do	1872 and 1874	39.14
13458	Oliver Holmes, Hawk Point, Mo	do	1866 and 1868	12.08
13459	A. S. Adams, Hickory Barrens, Mo	do	do	16.60
13460	Wm. D. Jordan, Hickory Hill, Mo	do	do	11.78
13461	Jerry V. Robinson, High Blue, Mo	do	1871 and 1872	42.08
13462	Thos. J. Hart, High Point, Mo	do	1866 and 1868	74.76
	do	do	1872 and 1874	26.26
13463	Eugene Amor, Hillsborough, Mo	do	1870 and 1872	61.72
13464	Calvin Daughters, Hitt, Mo	do	1868 and 1869	5.77
13465	David Foster, Hitt, Mo	do	1870 and 1872	20.94
	do	do	1872 and 1873	7.78
	do	do	1869 and 1870	5.76
13466	John Evans, Hopewell Furnace, Mo	do	1872 and 1874	26.86

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13467	J. B. Blankenship, Houston, Mo	Compensation of postmasters readjusted, etc.	1872 and 1874	$45.40
13468	J. E. Mathews, Hudson, Mo	do	1870 and 1872	240.63
13469	Wm. Pool, Hugginsville, Mo	do	1868 and 1870	5.36
13470	David A. Witherup, Hunnewell, Mo	do	1866	13.73
13471	Wm. D. Swindell, Huntingdale, Mo	do	1870 and 1872	33.32
	do	do	1872 and 1874	13.60
13472	John V. Logan, Ironton, Mo	do	do	165.56
13473	Salem True, Isadora, Mo	do	1873 and 1874	10.06
13474	J. B. Richards, Island City, Mo	do	1870 and 1872	6.31
13475	Branson Jackson, Jackson's Corners, Mo.	do	1866 and 1868	34.32
13476	J. S. McCanne, Jacksonville, Mo	do	1872 and 1873	22.76
13477	V. B. Wilson, Jamestown, Mo	do	1866 and 1867	15.40
13478	B. H. Wilder, Johns Branch, Mo	do	1868 and 1870	16.72
	do	do	1870 and 1872	20.44
	do	do	1872 and 1874	10.58
13479	A. J. Triplett, Judson, Mo	do	1867 and 1868	5.93
	do	do	1868 and 1870	7.50
	do	do	1870 and 1872	8.96
13480	Singleton L. Kasey, Kaseyville, Mo	do	do	27.08
	do	do	1872 and 1874	19.32
13481	W. R. Worth, Kidder, Mo	do	1869 and 1870	21.10
13482	Wm. Brantner, Kiddville, Mo	do	1866 and 1868	44.84
	do	do	1868 and 1869	6.66
13483	J. Buxton, Kiddville, Mo	do	1869 and 1870	6.66
	do	do	1870 and 1872	27.04
13484	Alvin G. Cook, Kingston, Mo	do	1871 and 1872	53.75
13485	F. M. Hill, Kirkwood, Mo	do	1866 and 1867	23.21
13486	Chas. Cartall, Knob View, Mo	do	1867 and 1868	15.94
	do	do	1870 and 1872	18.46
	do	do	1872 and 1874	29.12
13487	John Grimes, Knoxville, Mo	do	1866 and 1868	41.38
	do	do	1868 and 1869	20.28
13488	Clayton Tiffin, Knoxville, Mo	do	1869 and 1870	15.51
	do	do	1870 and 1872	27.12
	do	do	1872 and 1874	56.40
13489	Jas. C. White, La Grange, Mo	do	1866 and 1867	74.34
13490	T. B. Bohon, La Grange, Mo	do	1867 and 1868	55.64
	do	do	1868 and 1869	44.87
13491	Lyman O. Hudson, La Grange, Mo	do	1871 and 1872	179.03
13492	Michael Lamey, La Monte, Mo	do	1868	6.80
13493	B. Swarthout, La Plata, Mo	do	1872 and 1874	136.88
13494	H. D. Heimsath, Lake Creek, Mo	do	1870 and 1872	16.24
	do	do	1872 and 1874	15.80
13495	Geo. J. McNeeley, Lakeville, Mo	do	1873 and 1874	3.94
13496	John N. Lamar, Lamar's Station, Mo	do	1870 and 1872	17.74
13497	Wm. S. Pinwell, Lane's Prairie, Mo	do	1866 and 1868	39.62
	do	do	1868 and 1870	39.00
	do	do	1870 and 1872	95.10
	do	do	1872 and 1874	23.36
13498	Erwin Ellis, Lebanon, Mo	do	1869 and 1870	24.81
13499	Jno. C. Brown, Lewisburgh, Mo	do	do	9.81
13500	Geo. W. McKean, Lexington, Mo	do	1870 and 1872	462.80
13501	Aydlott Millsaps, Linden, Mo	do	1866 and 1867	28.95
13502	C. H. Cook, Lindley, Mo	do	1871 and 1872	44.00
	do	do	1872 and 1874	74.78
13503	F. L. Withaup, Linn Creek, Mo	do	1866	4.61
13504	James Hicks, Linn Creek, Mo	do	do	7.49
13505	C. B. Callison, Linnwood, Mo	do	1866 and 1867	1.89
13506	Jos. Albertson, Linnwood, Mo	do	1867 and 1868	1.89
	do	do	1872 and 1874	6.66
13507	Gabriel S. Woods, Lisbon, Mo	do	1868 and 1870	50.28
13508	Washington Rea, Little Black, Mo	do	1870 and 1872	27.34
13509	A. Grogan, Livonia, Mo	do	1866 and 1867	5.53
13510	Daniel Martin, Livonia, Mo	do	1870 and 1872	17.77
	do	do	1872 and 1874	5.22
13511	Samuel S. Huling, Locust Hill, Mo	do	1866 and 1867	19.90
13512	B. H. Fugate, Locust Hill, Mo	do	1867 and 1868	33.19
13513	Wm. Copeland, Logan's Creek, Mo	do	1870 and 1872	19.40
	do	do	1872 and 1874	9.30
13514	Wm. C. Scott, Lone Elm, Mo	do	do	85.24
13515	H. E. Rexrode, Long Lane, Mo	do	1870 and 1872	43.96
13516	Peter Lutes, Luteston, Mo	do	1866 and 1868	10.72
13517	Francis Rurowe, Manchester, Mo	do	1870 and 1871	21.47
13518	J. C. Hollocher, Manchester, Mo	do	1871 and 1872	21.47
	do	do	1872 and 1874	38.46
13519	Peter Watson, Marble Hill, Mo	do	1871 and 1872	116.08
13520	Eliza J. Goss, Marshfield, Mo	do	1866 and 1868	195.20
	do	do	1868 and 1869	31.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13521	F. A. Schaberg, Marthaville, Mo	Compensation of postmasters readjusted, etc.	1868 and 1870	$42.52
	do	do	1870 and 1872	45.12
	do	do	1872 and 1874	60.16
13522	J. W. Gray, Martin, Mo	do	1867 and 1868	12.32
13523	Jas. H. Sparks, Martinstown, Mo	do	1872 and 1874	14.72
13524	Wm. W. Jesse, Martinsville, Mo	do	1870 and 1872	46.38
13525	H. H. Geiger, Marysville, Mo	do	1873 and 1874	203.99
13526	Alex Black, Marysville, Mo	do	1869 and 1870	30.95
13527	Jas. B. Callison, Mayview, Mo	do	1870 and 1872	62.92
	do	do	1872 and 1873	10.92
13528	H. Black, Meadville, Mo	do	1870 and 1872	57.40
13529	Chas. J. Ostenwald, Medora, Mo	do	1869 and 1870	33.32
13530	Peter Probasco, Mendota, Mo	do	do	5.46
	do	do	1872 and 1873	3.69
13531	W. T. Williams, Miami, Mo	do	1867	43.31
13532	Thos. B. Branham, Middle Grove, Mo	do	1866 and 1868	24.00
	do	do	1868 and 1870	32.56
	do	do	1870 and 1872	49.90
	do	do	1872 and 1873	51.60
13533	Thos. Hocker, Middle Grove, Mo	do	1873 and 1874	22.42
13534	Dave Waterfield, Milan, Mo	do	1866 and 1868	61.84
13535	Jas. L. Graham, Milan, Mo	do	1868	10.77
13536	Owen Wilson, Milan, Mo	do	1869 and 1870	59.00
13537	S. B. Barbee, Miles Point, Mo	do	1870 and 1872	30.84
13538	M. F. Rainwater, Millville, Mo	do	1866 and 1868	56.84
13539	Ambrose Young, Millville, Mo	do	1868 and 1870	30.70
	do	do	1872 and 1873	6.39
13540	Jas. E. Mudd, Millwood, Mo	do	1870 and 1872	13.02
	do	do	1872 and 1874	29.26
13541	Merritt W. Norton, Minden, Mo	do	1870	2.96
13542	C. M. Service, Mine La Motte, Mo	do	1870 and 1872	151.36
	do	do	1872 and 1874	55.72
13543	Wm. C. Wings, Wingsville, Mo	do	1872 and 1873	3.34
13544	Wm. H. Crawford, Mirabile, Mo	do	1866 and 1868	47.80
	do	do	1872 and 1874	47.92
13545	Robt. D. Rogers, Mitchellville, Mo	do	1868 and 1869	7.47
13546	Chas. Tisue, Moberly, Mo	do	1866 and 1868	56.90
13547	Geo. W. McGovern, Monticello, Mo	do	1869 and 1870	36.27
13548	Rodney Glazier, Mooresville, Mo	do	1866 and 1868	43.60
	do	do	1868	14.64
13549	J. W. Glenn, Mooresville, Mo	do	1869	10.94
13550	J. E. Hitt, Mooresville, Mo	do	1869 and 1870	32.98
13551	F. Buento, Morrison, Mo	do	1871 and 1872	8.11
13552	J. H. Morse, Morse's Mill, Mo	do	1866 and 1868	34.34
	do	do	1868 and 1870	19.52
	do	do	1870 and 1872	25.00
13553	F. D. Neblick, Mounds, Mo	do	do	50.66
13554	Jno. Vaughan, Mount Airy, Mo	do	1868	3.32
13555	C. W. Watts, Mount Airy, Mo	do	1869	5.00
13556	W. H. Worley, Mount Hope, Mo	do	1868 and 1870	30.20
	do	do	1870 and 1872	47.74
	do	do	1872 and 1873	28.08
13557	Goolsbury Kerby, Mount View, Mo	do	1870 and 1872	11.40
	do	do	1872 and 1874	31.34
13558	Thos. H. Jones, Mount Vernon, Mo	do	do	86.72
13559	Thos. J. Fields, Myers, Mo	do	1868	1.25
13560	Jesse Dodson, Myers, Mo	do	1868 and 1870	14.98
	do	do	1870 and 1872	20.93
13561	Marvin Dale, Nashville, Mo	do	1871 and 1872	11.52
13562	Lyman L. Beeman, Neosho, Mo	do	1868 and 1869	28.00
13563	John M. Robeson, Neosho, Mo	do	1869	14.00
13564	John Wilson, New Bloomfield, Mo	do	1868 and 1870	35.56
	do	do	1870 and 1872	65.64
	do	do	1872 and 1874	27.34
13565	W. W. Green, New Boston, Mo	do	1868 and 1870	13.56
13566	J. C. Isley, New Gordon, Mo	do	1870 and 1872	31.66
	do	do	1872 and 1874	15.78
13567	M. Duncan, New Harmony, Mo	do	1867 and 1867	16.33
	do	do	1868 and 1869	2.82
13568	M. E. Dodge, New London, Mo	do	1867 and 1868	34.81
	do	do	1870 and 1871	57.53
13569	Abel D. Cook, New Madrid, Mo	do	1866 and 1867	47.80
13570	H. C. Latham, New Madrid, Mo	do	1867 and 1868	56.99
13571	J. H. Sudbrock, New Melle, Mo	do	1866 and 1868	20.16
	do	do	1868 and 1869	37.41
13572	Jos. E. Sauer, New Offenburgh, Mo	do	1866 and 1868	19.78
	do	do	1868 and 1870	18.70
	do	do	1870 and 1871	19.97

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13573	Solomon Stahl, Ninevah, Mo	Compensation of postmasters readjusted, etc.	1870 and 1872	$39.64
	do	do	1872 and 1873	12.67
13574	David Moore, North Salem, Mo	do	1866 and 1868	23.32
	do	do	1868 and 1870	21.90
	do	do	1870 and 1872	38.14
	do	do	1872 and 1874	15.54
13575	G. W. Houston, Omaha, Mo	do	1866 and 1868	38.00
	do	do	1870 and 1871	4.47
13576	Francis A. Howlett, Omaha, Mo	do	1871	1.49
13577	Jno. F. Wilhoeft, Old Alexandria, Mo	do	1866 and 1868	28.80
	do	do	1870 and 1872	13.60
13578	Robt. Black, Old Mines, Mo	do	1870 and 1871	9.98
13579	Wm. Jenkerson, Old Mines, Mo	do	1870 and 1872	6.51
	do	do	1872 and 1874	24.30
13580	F. G. Schoenen, Osage City, Mo	do	1870 and 1872	108.02
13581	Arthur Brock, Owasco, Mo	do	1868 and 1870	11.00
	do	do	1870 and 1872	16.36
	do	do	1872 and 1874	29.74
13582	J. G. Wright, Oxford, Mo	do	1866 and 1868	27.68
	do	do	1870 and 1871	8.04
13583	Benj. F. Records, Paradise, Mo	do	1869 and 1870	5.65
13584	Hugh M. Bradley, Patterson, Mo	do	1870 and 1872	24.26
13585	T. R. O'Kelley, Patton, Mo	do	1868 and 1870	24.82
	do	do	1870 and 1872	78.27
13586	W. B. Keller, Paulville, Mo	do	1868	7.38
13587	J. N. McCreery, Paulville, Mo	do	1868 and 1870	51.70
	do	do	1870 and 1872	26.70
	do	do	1872 and 1874	52.58
13588	Jos. Melvan, Paynesville, Mo	do	1866 and 1868	25.06
	do	do	1870 and 1872	43.54
13589	J. T. Duvall, Paynesville, Mo	do	1873 and 1874	35.76
13590	Arthur Shuler, Peaksville, Mo	do	1870 and 1872	32.90
13591	Chas. W. Fisk, Peculiar, Mo	do	1872 and 1874	101.24
13592	Jas. M. Crosthwait, Perry, Mo	do	do	27.32
13593	Jno. C. McBride, Perryville, Mo	do	1866	10.40
13594	Jno. C. Doerr, Perryville, Mo	do	do	12.60
13595	V. P. Tucker, Perryville, Mo	do	1866 and 1867	33.42
13596	A. W. Bridges, Petra, Mo	do	1868 and 1870	43.62
13597	Jno. S. McGinley, Philander, Mo	do	do	10.52
	do	do	1870 and 1872	11.88
13598	E. H. Harris, Pilot Grove, Mo	do	1866 and 1868	11.64
13599	do	do	1868 and 1870	48.84
	do	do	1870 and 1872	63.56
	do	do	1872 and 1874	24.90
13600	Ferdinand Schmitz, Pilot, Knob, Mo	do	1867 and 1868	416.81
13601	Herman Hoefor, Pinckney, Mo	do	1866 and 1868	20.48
13602	Jas. Downing, Pin Oak, Mo	do	1868 and 1870	4.92
	do	do	1870 and 1871	6.16
13603	Wm. T. Aydelott, Pin Oak, Mo	do	1871 and 1872	10.29
	do	do	1872	1.06
13604	G. F. Jones, Pisgah, Mo	do	1871	22.71
13605	Caroline Temming, Pitts, Mo	do	1868 and 1870	2.64
	do	do	1870 and 1872	9.26
13606	Benj. L. Mallonee, Pittsburgh, Mo	do	1868 and 1870	2.48
	do	do	1870 and 1872	7.64
	do	do	1872 and 1874	4.26
13607	R. M. Brasfield, Pleasant Home, Mo	do	do	6.22
13608	John Hollister, Pleasant Park, Mo	do	1868 and 1870	5.24
13609	J. C. Spence, Pleasant Valley, Mo	do	1870 and 1872	9.76
	do	do	1872 and 1874	26.76
13610	Samuel M. Green, Pocahontas, Mo	do	1868 and 1869	12.42
13611	F. Essen, Pond, Mo	do	1870 and 1871	5.97
13612	Elisa Essen, Pond, Mo	do	1871 and 1872	9.96
13613	Henry W. Kraemer, Port Hudson, Mo	do	1868 and 1870	37.44
	do	do	1872 and 1874	13.14
13614	John W. Brashear, Portland, Mo	do	1866 and 1868	52.88
13615	Geo. W. Willis, Potosi, Mo	do	do	152.22
13616	A. J. Moore, Price's Branch, Mo	do	do	41.20
	do	do	1868 and 1870	24.12
	do	do	1870 and 1872	25.66
	do	do	1872 and 1873	19.42
13617	Jacob Proctor, Proctorville, Mo	do	do	6.25
13618	L. T. Givens, Prospect Grove, Mo	do	1866 and 1867	10.09
13619	Annie Myler, Prospect Hill, Mo	do	1872 and 1874	19.06
13620	Gilpin S. Tuttle, Providence, Mo	do	1868 and 1870	11.00
	do	do	1870 and 1872	45.68
13621	Wm. Pryor, Pryor's Store, Mo	do	do	27.00
13622	Chas. F. Lawrence, Punjaub, Mo	do	1866 and 1868	6.38
	do	do	1870 and 1872	16.88

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13623	W. B. Rogers, Ravanna, Mo	Compensation of postmasters readjusted, etc.	1868	$4.57
13624	Jas. Burrows, Ravanna, Mo	do	1870	3.79
13625	J. W. Brown, Readsville, Mo	do	1866 and 1867	8.07
	do	do	1872 and 1873	7.05
13626	Gerard Lansing, Rhineland, Mo	do	1868 and 1870	8.18
13627	Henry Schrader, Rich Fountain, Mo	do	do	12.58
	do	do	1870 and 1872	17.86
	do	do	1872 and 1874	14.12
13628	Wm. A. Sutton, Richmond, Mo	do	do	631.06
13629	Eph. F. Quinn, Richwoods, Mo	do	1870 and 1871	12.25
13630	J. S. Briter, Roanoke, Mo	do	1866 and 1868	80.80
13631	Susan M. Slade, Rocheport, Mo	do	1869 and 1870	68.41
	do	do	1870 and 1872	199.18
	do	do	1872 and 1874	123.84
13632	John C. Dragoo, Rockport, Mo	do	1871 and 1872	75.47
13633	A. B. McCreery, Rockport, Mo	do	1872	31.57
13634	Enoch P. Farrell, Rolla, Mo	do	1866	408.10
13635	Jesse Boone, Rondo, Mo	do	1868	5.12
13636	John H. French, Rondo, Mo	do	1868 and 1870	35.81
13637	E. A. Ashby, Rose Hill, Mo	do	1872 and 1874	23.02
13638	Fred. Roth, Rothville, Mo	do	1871 and 1872	30.98
	do	do	1872 and 1874	24.86
13639	John W. McDavis, Sacramento, Mo	do	do	2.84
13640	W. H. Martens, Saint Charles, Mo	do	1870	90.41
13641	Geo. R. Buckner, Saint Charles, Mo	do	1870 and 1872	336.15
13642	Robert McKee, Saint Francisville, Mo	do	1867 and 1868	34.06
	do	do	1868 and 1869	14.40
13643	W. H. Seaman, Saint James, Mo	do	1870 and 1872	179.59
13644	A. S. Runyan, Saint John, Mo	do	1866 and 1868	125.44
	do	do	1868 and 1869	7.60
13645	D. W. Pollock, Saint John, Mo	do	1869 and 1870	6.24
	do	do	1870 and 1872	18.62
	do	do	1872 and 1874	25.98
13646	J. W. Layton, Saint Mary's, Mo	do	1873 and 1874	39.04
13647	B. Weinerth, Saint Peter, Mo	do	1870 and 1872	12.44
13648	Kirby McGrew, Saline, Mo	do	1866 and 1868	6.26
13649	Jas. S. Taylor, Saline, Mo	do	1870 and 1871	9.39
13650	Elijah W. Koon, Sand Stone, Mo	do	1871 and 1872	4.17
13651	Jacob Wohlschlaeger, Sappington, Mo	do	1870 and 1872	23.76
	do	do	1872 and 1874	9.42
13652	Gilbert Schooling, Sarcoxie, Mo	do	1868	20.76
13653	Smith Nichols, Seneca, Mo	do	1872 and 1874	183.94
13654	W. W. Weatherby, Shelbina, Mo	do	1869 and 1870	137.19
13655	J. H. Mincke, Sherman, Mo	do	1868 and 1870	31.70
13656	Merritt Husted, Shibley's Point, Mo	do	1870 and 1872	16.60
	do	do	1872	2.03
13657	Jacob A. Sallade, Shibley's Point, Mo	do	1872 and 1874	14.24
13658	Alexander Gregory, Shotwell, Mo	do	1868 and 1869	10.57
13659	John H. Schueer, Shotwell, Mo	do	1870	8.52
	do	do	1872 and 1874	15.36
13660	Samuel Keith, Sikeston, Mo	do	1871 and 1872	40.05
13661	John Y. Kennedy, Silver Creek, Mo	do	1870 and 1872	14.68
	do	do	1872 and 1874	5.24
13662	Henry Allison, Smith City, Mo	do	1866 and 1868	65.17
13663	M. T. P. McCormack, Sni Bar, Mo	do	1868 and 1870	4.90
	do	do	1870 and 1872	10.50
13664	A. E. Forderhase, Snow Hill, Mo	do	1872 and 1874	61.74
13665	J. M. Weatherford, Spencersburgh, Mo	do	1866 and 1868	47.18
	do	do	1868	2.74
13666	E. R. Gates, Spencersburgh, Mo	do	1868 and 1870	19.15
13667	M. Boyd, Springfield, Mo	do	1866 and 1867	690.92
13668	Permelia C. Stephens, Springfield, Mo	do	1867 and 1868	1,198.34
13669	John R. Clark, Spring Hill, Mo	do	1866 and 1867	38.26
13670	Grandison A. Goben, Spring Hill, Mo	do	1868 and 1869	11.97
13671	Franklin Bennett, Stanton Copper Mines, Mo.	do	do	3.71
13672	J. S. Stevenson, Stephens, Mo	do	1870 and 1872	8.10
13673	Thos. L. Stephens, Stephens' Store, Mo	do	1866 and 1868	34.60
	do	do	1870 and 1872	9.36
13674	Wm. A. Hogsett, Stockland, Mo	do	1866 and 1868	5.67
13675	Mrs. H. Ebrecht, Stono, Mo	do	1868 and 1870	19.26
	do	do	1870 and 1872	7.58
13676	Chas. Andrea, Stony Hill, Mo	do	1871 and 1872	8.67
13677	M. H. Harris, Sturgeon, Mo	do	1869 and 1870	68.41
13678	J. W. Slaughter, Sue City, Mo	do	1872 and 1874	10.54
13679	M. W. Greene, Sulphur Springs Landing, Mo.	do	do	43.44
13680	A. G. Cornelius, Taberville, Mo	do	do	18.44
13681	J. B. Wegman, Taos, Mo	do	1866 and 1867	4.21

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13682	Benedict Crump, Troy, Mo	Compensation of postmasters readjusted, etc.	1870 and 1872	$136.32
	do	do	1872 and 1873	48.64
13683	Geo. W. Mohr, Troy, Mo	do	1873 and 1874	43.88
13684	James Drake, Tulvania, Mo	do	1866 and 1868	28.40
	do	do	1872 and 1874	3.76
13685	Hugh Sturdy, Turney's Station, Mo	do	1870 and 1872	60.28
	do	do	1872	22.69
13686	S. J. Crowe, Union, Mo	do	1868 and 1870	57.00
13687	Jabez Hunt, Union Grove, Mo	do	1870 and 1872	9.50
	do	do	1872 and 1874	5.10
13688	A. T. McDowell, Urbana, Mo	do	1866 and 1867	22.52
13689	E. P. Vaughan, Urbana, Mo	do	1873 and 1874	23.05
13690	Jas. S. Fisher, Utica, Mo	do	1869 and 1870	31.24
	do	do	1870 and 1872	120.74
	do	do	1872 and 1874	84.62
13691	P. C. Barrows, Vineland, Mo	do	1870 and 1872	26.74
13692	F. M. Wade, Wadesburgh, Mo	do	1872	5.28
	do	do	1872 and 1874	63.50
13693	L. E. Scott, Waldron, Mo	do	do	41.70
13694	Samuel Christman, Warren, Mo	do	1866 and 1868	16.45
	do	do	1868 and 1870	11.56
13695	R. D. Canthorn, Waverly, Mo	do	1868 and 1869	44.74
13696	Thos. C. West, Waynesville, Mo	do	1866 and 1868	192.58
13697	Jesse A. Rayl, jr., Waynesville, Mo	do	1870 and 1872	76.04
	do	do	1872 and 1874	21.72
13698	W. A. Abington, Wentzville, Mo	do	1866 and 1867	43.41
13699	Preston B. Scott, Wentzville, Mo	do	1867 and 1868	130.24
13700	S. Korns, West Liberty, Mo	do	do	8.04
	do	do	1868 and 1870	4.20
13701	S. B. Develbiss, West Point, Mo	do	1872 and 1874	5.38
13702	E. Houston, Whiteaville, Mo	do	1871 and 1872	27.12
13703	Hiram Blankinship, Willard, Mo	do	1868 and 1869	4.95
13704	W. B. Reynolds, Wilmarthville, Mo	do	1866 and 1868	14.44
	do	do	1868 and 1870	14.96
	do	do	1872 and 1872	23.66
	do	do	1872 and 1874	20.36
13705	Frank Kanuf, Winchester, Mo	do	do	30.32
13706	Jno. W. Porter, Woodlawn, Mo	do	1866 and 1868	12.42
13707	E. E. Hand, Woodville, Mo	do	1870 and 1872	26.50
13708	H. M. Hill, Prickly Pear, Mont	do	do	15.18
13709	Adam Olinger, Arizona, Nebr	do	do	9.14
	do	do	1872 and 1873	6.59
13710	W. B. Newton, Arizona, Nebr	do	1873 and 1874	6.58
13711	Amos Tefft, Avoca, Nebr	do	1868 and 1870	1.48
13712	John S. Minick, Aspinwall, Nebr	do	1871 and 1872	20.93
13713	William Nightingale, Big Sandy, Nebr.	do	1868 and 1869	6.78
13714	T. H. Tisdale, Beaver Crossing, Nebr	do	1873 and 1874	75.51
13715	W. T. Buchanan, Camden, Nebr	do	1870 and 1871	45.61
13716	H. W. Farley, Centre Valley, Nebr	do	1866 and 1868	17.98
	do	do	1868 and 1870	5.42
13717	Henry J. Hudson, Columbus, Nebr	do	1867 and 1868	124.38
13718	W. S. Dilworth, Crab Orchard, Nebr	do	1866 and 1867	1.36
	do	do	1869 and 1870	8.17
	do	do	1872 and 1874	16.40
13719	Frank Welsh, Decatur, Nebr	do	1866	6.98
13720	O. A. Wolcott, Elkhorn City, Nebr	do	1868	7.09
13721	Wm. K. Turner, Elkhorn City, Nebr	do	1869 and 1870	21.27
	do	do	1872 and 1874	20.72
13722	H. O. Paine, Fremont, Nebr	do	1870 and 1872	417.38
13723	Jonathan Gill, Glen Rock, Nebr	do	do	34.54
13724	Joseph Brannon, Jackson, Nebr	do	1867 and 1868	2.37
13725	Frederick C. Johnson, Linwood, Nebr	do	1870 and 1872	5.88
13726	Pembroke Ayer, Lisbon, Nebr	do	1870	1.22
	do	do	1870 and 1872	8.20
	do	do	1872 and 1874	4.23
13727	George Gird, Middleburgh, Nebr	do	1870 and 1872	12.58
13728	V. C. Utley, Nursery Hill, Nebr	do	1866 and 1868	48.26
13729	Samuel Freed, Oakland, Nebr	do	1870 and 1872	78.38
	do	do	1872 and 1874	44.94
13730	Daniel Clemens, Rock Bluff, Nebr	do	1866	12.50
13731	J. M. Patterson, Rock Bluff, Nebr	do	1867 and 1868	37.51
13732	John W. Thompson, Saint Frederick, Nebr.	do	1872 and 1873	10.48
13733	John W. Holt, Salem, Nebr	do	1867 and 1868	31.77
	do	do	1868 and 1869	11.68
13734	Henry Malone, Wells' Mills, Nebr	do	1870 and 1872	5.24
13735	Howard White, Winnebago, Nebr	do	do	57.18

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13736	James Chase, Wyoming, Nebr	Compensation of postmasters readjusted, etc.	1868 and 1870	$24.78
13737	Abner C. Reed, Wyoming, Nebr	do	1870	3.54
	do	do	1870 and 1872	26.68
	do	do	1872	4.58
13738	W. E. Bates, Xenia, Nebr	do	1872 and 1874	6.16
13739	W. C. Meredith, Aurora, Nev	do	1868	5.89
13740	Frederick A. Ent, Franktown, Nev	do	1868 and 1869	21.43
13741	E. B. Towl, Franktown, Nev	do	1869 and 1870	35.72
	do	do	1870 and 1871	28.59
13742	S. A. Chubbuck, Gold Hill, Nev	do	1866 and 1868	431.38
13743	F. J. Daniels, Humboldt, Nev	do	1868	5.90
13744	Samuel Woodward, Ruby Valley, Nev	do	1866 and 1868	107.06
13745	J. A. Bonham, Silver City, Nev	do	1866	115.17
13746	Wm. S. Bouton, Silver City, Nev	do	1867 and 1868	345.51
13747	Warren B. English, Silver Peak, Nev	do	1870	22.65
	do	do	1870 and 1872	125.36
	do	do	1872 and 1874	46.08
13748	T. A. Freeman, Unionville, Nev	do	1870 and 1871	74.76
13749	S. G. Shepard, Alstead Centre, N. H	do	1871 and 1872	7.30
	do	do	1872 and 1874	12.72
13750	Hollis E. Abbott, Amherst, N. H	do	1866 and 1868	119.54
	do	do	1868	13.20
13751	Horace E. Woodbury, Amherst, N. H	do	1869 and 1870	66.00
	do	do	1870 and 1872	120.42
13752	Harris J. Poor, Amoskeag, N. H	do	do	33.86
	do	do	1872 and 1874	41.06
13753	David H. Goodell, Antrim, N. H	do	1868 and 1870	66.46
	do	do	1872 and 1874	98.76
13754	Chas. Fernald, Atkinson Depot, N. H	do	1866 and 1868	96.44
13755	Jos. C. Russell, Barnstead, N. H	do	1866 and 1867	6.20
13756	C. W. Blanchard, Barnstead, N. H	do	1867 and 1868	7.79
13757	Thos. Hanson, Bartlett, N. H	do	1866 and 1868	7.82
13758	Arthur L. Meserer, Bartlett, N. H	do	1868 and 1870	11.00
13759	Jas. F. Kendall, Bedford, N. H	do	do	31.20
	do	do	1872 and 1874	37.40
13760	A. F. Johnson, Belmont, N. H	do	do	50.18
13761	Geo. A. Whittemore, Bennington, N. H	do	1866 and 1868	57.30
	do	do	1872 and 1874	58.00
13762	Wm. A. Carr, Bradford, N. H	do	do	82.56
13763	W. J. Dudley, Candia Village, N. H	do	1866 and 1868	172.04
	do	do	1868 and 1870	45.00
13764	Alf. H. Brown, Canterbury, N. H	do	1866 and 1868	58.32
	do	do	1870 and 1872	53.54
	do	do	1872 and 1874	95.64
13765	Jonas Howe, Carroll, N. H	do	1866 and 1868	4.34
	do	do	1868 and 1870	1.86
	do	do	1870 and 1872	2.82
	do	do	1872 and 1874	4.76
13766	Hugh McNorton, Centre Conway, N. H	do	1866 and 1868	41.58
13767	Daniel Merrow, Centre Ossipee, N. H	do	1866	.25
13768	Chas. Blanchard, Centre Sandwich, N. H.	do	1866 and 1868	77.78
13769	Demeritt Place, Centre Strafford, N. H	do	1866 and 1868	17.50
13770	C. E. Richardson, Charleston, N. H	do	1866	17.04
13771	Thos. J. Melvin, Chester, N. H	do	1866 and 1868	48.95
13772	Romanayo C. Cressy, Chesterfield, N. H	do	1870 and 1872	17.32
	do	do	1872 and 1873	10.92
13773	Edw. N. Cummings, Colebrook, N. H	do	1866 and 1868	95.04
13774	Richard B. Thorn, Conway, N. H	do	do	42.00
13775	S. E. Ruggles, Dalton, N. H	do	do	62.20
	do	do	1870 and 1872	22.04
13776	Oliver Sanborn, Danville, N. H	do	1866 and 1868	18.92
13777	Henry E. Eastman, Derry Depot, N. H	do	1870 and 1872	57.90
13778	Hope Lathrop, Drewsville, N. H	do	1866 and 1868	19.36
	do	do	1870 and 1872	30.64
13779	Rodney Buss, East Acworth, N. H	do	1866 and 1868	10.14
	do	do	1868 and 1870	7.94
	do	do	1870 and 1872	6.88
13780	Carl G. Pevare, East Andoner, N. H	do	1872 and 1874	33.20
13781	Henry H. Robertson, Eaton Centre, N. H.	do	1866 and 1868	19.02
13782	John Putney, East Concord, N. H	do	do	63.37
13783	M. P. Blaisdell, East Madison, N. H	do	do	16.20
	do	do	1870 and 1872	10.72
13784	Henry L. Carter, East Northwood, N. H.	do	1866 and 1868	57.59
13785	Richard Hoyt, East Northwood, N. H	do	1870 and 1872	82.08
	do	do	1872 and 1874	64.61
13786	C. A. Claugh, East Unity, N. H	do	1872	3.04

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13787	A. B. Johnson, East Weare, N. H	Compensation of postmasters readjusted, etc.	1870 and 1872	$21.80
13788	Geo. E. Carleston, Ellsworth, N. H	do	1866 and 1868	7.70
	do	do	1868 and 1870	9.06
13789	Philip S. Batcheller, Fitzwilliam, N. H.	do	1866 and 1868	129.64
	do	do	1866 and 1870	90.26
13790	Geo. A. Whittemore, Fitzwilliam, N. H	do	1866	6.28
13791	Samuel D. Downes, Francestown, N. H	do	1866 and 1868	62.70
13792	Rensselaer Towle, Freedom, N. H	do	do	36.02
13793	Isaiah L. Robinson, Fremont, N. H	do	do	27.92
13794	Chas. A. Dockham, Gilmanton Iron Works, N. H.	do	do	74.18
13795	Eliphalet R. Poor, Goffstown Centre, N. H.	do	do	15.32
13796	Chas. S. Whitehouse, Gorric, N. H	do	1868 and 1870	89.32
	do	do	1870 and 1872	96.40
	do	do	1872 and 1874	107.02
13797	Wesley Wight, Gorham, N. H	do	1868 and 1869	112.92
13798	Valentine L. Stiles, Gorham, N. H	do	1870	42.08
13799	Lucius A. Buneree, Grantham, N. H	do	1867	9.81
13800	Jane B. Rand, Greenland Depot, N. H	do	1866 and 1868	47.66
	do	do	1868 and 1870	14.98
13801	Ebenezer S. Tabor, Hampstead, N. H	do	1873 and 1874	22.91
13802	John C. Perkins, Hampton, N. H	do	1869 and 1870	44.64
13803	E. J. Tilton, Hampton Falls, N. H	do	1866 and 1868	30.63
13804	Geo. D. Dodge, Hampton Falls, N. H	do	1870	2.35
13805	David Camp, Hanover Centre, N. H	do	1866 and 1868	9.36
13806	Elihu Hurlbutt, Hanover Centre, N. H	do	1872 and 1874	47.42
13807	Alfred E. Jaques, Hebron, N. H	do	1866 and 1867	18.93
13808	Geo. D. Stackpole, Hill, N. H	do	1873 and 1874	36.06
13809	Frank D. Fisk, Hinsdale, N. H	do	do	400.34
13810	Oliver P. Meserve, Jackson, N. H	do	1867 and 1868	20.35
	do	do	1868 and 1870	27.96
13811	Francis Hilliard, Kensington, N. H	do	1866	2.77
13812	Geo. Blake, Kensington, N. H	do	1866 and 1868	19.04
13813	J. E. Odin, Laconia, N. H	do	1872 and 1874	341.33
13814	W. F. Sanborn, Kingston, N. H	do	1866 and 1868	34.40
13815	Timothy G. Davis, Lee, N. H	do	1866	8.45
13816	Henry F. Bachelder, London, N. H	do	1866 and 1868	60.70
	do	do	1870 and 1872	34.80
13817	G. W. M. Pitman, Lower Bartlett, N. H	do	1866 and 1868	64.16
	do	do	1868 and 1870	10.40
13818	James M. Gilman, Lower Gilmanton, N. H.	do	1866 and 1868	16.46
	do	do	1868 and 1870	9.10
	do	do	1870 and 1872	8.52
	do	do	1872 and 1874	5.50
13819	Ira E. Titus, Lyman, N. H	do	1868 and 1869	21.36
	do	do	1870 and 1871	52.05
13820	W. J. Herrick, Lyndeborough, N. H	do	1866	5.93
13821	W. W. Curtis, Lyndeborough, N. H	do	1867 and 1868	16.19
	do	do	1870 and 1872	72.27
13822	Cyrus S. Moors, Marlborough Depot, N. H.	do	1866 and 1868	41.78
13823	Arthur W. Fiske, Marlow, N. H	do	do	46.36
13824	D. H. Durgin, Melvin Village, N. H	do	do	27.56
13825	L. Plummer, Meredith Centre, N. H	do	do	15.50
	do	do	1872 and 1874	13.60
13826	Mrs. W. H. H. Fernal, Meredith Village, N. H.	do	1871 and 1872	192.07
13827	C. D. Hamlin, Milan, N. H	do	1866 and 1867	37.93
13828	Dexter Dodge, Mill Village, N. H	do	1866 and 1868	18.42
13829	Elisha H. Carr, Mill Village, N. H	do	1870 and 1872	21.20
	do	do	1872 and 1874	14.66
13830	Chas. H. Looney, Milton, N. H	do	do	50.84
13831	Nathaniel Bruce, Mount Vernon, N. H	do	1866 and 1868	38.02
13832	S. M. Worthley, New Boston, N. H	do	1866 and 1867	27.25
13833	J. F. Garland, New Market, N. H	do	1870 and 1872	159.10
13834	Samuel Wims, Newport, N. H	do	1866 and 1867	48.98
13835	Wm. C. Berry, North Barnstead, N. H	do	1866 and 1868	33.34
13836	Almus Fairfield, North Branch, N. H	do	do	25.52
13837	Benj. D. Eastman, North Conway, N. H	do	1869 and 1870	47.21
13838	Geo. F. Colburn, North Dorchester, N. H.	do	1868 and 1870	5.64
13839	Moses H. Noyes, North Lisbon, N. H	do	1871 and 1872	9.06
13840	Matthew H. Taylor, North Salem, N. H	do	1870 and 1871	10.05
13841	Thos. S. Pease, North Strafford, N. H	do	1868 and 1870	49.47
	do	do	1870	4.31
13842	Hezekiah Williams, North Wolfborough, N. H.	do	1870 and 1872	14.60

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13842	Hezekiah Williams, North Wolfborough, N. H.	Compensation of postmasters readjusted, etc.	1872 and 1874	$9.66
13843	G. F. Russell, North Woodstock, N. H.	do	1871 and 1872	25.67
13844	John H. Chesley, Nottingham, N. H.	do	1866 and 1868	26.92
13845	Israel Dame, Nottingham Turnpike, N. H.	do	do	11.31
13846	B. W. Crawford, Nottingham, Turnpike, N. H.	do	1868	1.62
	do	do	do	5.17
13847	D. F. Tillotson, Oxford, N. H	do	1866 and 1868	203.34
	do	do	1868 and 1870	74.18
13848	Alexander Strong, Oxfordville, N. H.	do	1866	10.39
13849	Geo. Dodge, Piermont, N. H	do	1873 and 1874	18.27
13850	Amos C. Clement, Plaistow, N. H	do	1870 and 1872	87.20
13851	C. H. Greenleaf, Profile House, N. H.	do	1869 and 1870	64.10
	do	do	1870 and 1872	85.76
13852	Albert G. Messenger, Randolph, N. H	do	1868 and 1870	10.28
13853	Dan'l R. Spaulding, Richmond, N. H.	do	1866 and 1868	65.16
13854	James F. Place, Rochester, N. H	do	1866 and 1867	132.96
13855	James H. Burper, Scythville, N. H	do	1872 and 1874	22.10
13856	R. Shepard, Shaker Village, N. H	do	1866 and 1868	134.30
13857	Roswell Robertson, South Charleston, N. H.	do	1868 and 1870	20.48
13858	Lewis Snow, South Columbia, N. H.	do	do	5.86
	do	do	1870 and 1872	20.34
	do	do	1872 and 1874	7.02
13859	Phillip White, South Hampton, N. H.	do	do	25.40
	do	do	1868 and 1870	55.96
13860	Gideon Webster, South Kingston, N. H.	do	1866 and 1868	21.14
	do	do	1868 and 1870	22.40
13861	Geo. W. Wells, Sugar Hill, N. H.	do	1872	20.41
13862	Josiah Peabody, Sullivan, N. H.	do	1866 and 1868	20.20
13863	M. B. Britton, Surry, N. H	do	1868 and 1870	21.34
	do	do	1872 and 1873	9.41
13864	Truman Putney, Sutton, N. H	do	1866 and 1868	78.06
13865	Wm. Merrill, Thornton, N. H	do	1868 and 1870	12.48
	do	do	1870 and 1872	11.62
13866	George Drew, Thornton Ferry, N. H	do	1866 and 1868	59.52
13867	C. W. Whitney, Troy, N. H	do	1868 and 1870	93.18
	do	do	1870 and 1871	21.93
13868	James P. Gilman, Union, N. H.	do	1868 and 1869	28.49
13869	Chas. H. Tuttle, Wadley's Falls, N. H.	do	1866 and 1868	20.80
	do	do	1870 and 1872	23.72
	do	do	1872 and 1874	43.52
13870	Richard H. Beacham, Water Village, N H.	do	1866 and 1867	3.06
13871	John H. Beacham, Water Village, N. H.	do	1867 and 1868	4.07
	do	do	1868 and 1870	3.98
	do	do	1870 and 1872	9.36
	do	do	1872 and 1874	12.64
13872	Wm. E. Melendy, West Andover, N. H.	do	1868	2.31
13873	Thos. J. Sanborn, West Campton, N. H.	do	1866 and 1868	22.30
13874	Henry A. Redfield, West Claremont, N. H.	do	do	64.38
	do	do	1868 and 1870	62.16
13875	James P. Sargent, West Hopkinton, N. H.	do	1866 and 1868	5.54
13876	Isaac Rowell, West Hopkinton, N. H.	do	1868 and 1870	7.90
	do	do	1870 and 1872	3.94
13877	Jos. Kendrick, West Lebanon, N. H.	do	1866	35.13
13878	Abner K. Cole, West Milan, N. H	do	1866 and 1868	30.64
	do	do	1868 and 1869	.8.36
13879	Benj. T. Roberts, West Milan, N. H.	do	1869 and 1870	11.32
13880	Thos. F. Canney, West Milton, N. H	do	1872 and 1874	124.52
13881	Bradley Leach, Westmoreland, N. H	do	1866 and 1868	17.52
	do	do	1868 and 1869	11.58
13882	Jeremiah Marston, jr., West Ossipee, N. H.	do	1868 and 1870	6.48
	do	do	1870 and 1872	12.08
13883	Samuel Adams, jr., West Peterborough, N. H.	do	do	38.10
13884	Sylvanus Bartlett, Westport, N. H.	do	1866 and 1867	7.65
13885	L. S. Gordon, West Plymouth, N. H	do	1866 and 1868	20.14
13886	H. C. Frask, West Stewartstown, N. H.	do	do	44.54
13887	C. H. Weeks, West Thornton, N. H	do	1868 and 1870	58.40
	do	do	1872 and 1874	23.40
13888	John H. Greeley, Wilmot Flat, N. H.	do	1866 and 1868	51.50
13889	Warren Richardson, Wilson's Crossing, N. H.	do	do	34.66
13890	Benj. H. Hughes, Windham Depot, N. H.	do	1868 and 1869	17.31

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
12891	W. C. Norton, Allentown, N. J	Compensation of postmasters readjusted, etc.	1866 and 1867	$17.11
12892	J. T. Smith, Andover, N. J	do	1866 and 1868	74.10
	do	do	1872 and 1874	34.90
12893	Geo. Hoffman, Asbury, N. J	do	1869 and 1870	19.83
12894	Samuel A. Everett, Augusta, N. J	do	1866 and 1868	18.53
12895	Samuel Girton, Baker's Basin, N. J	do	do	13.38
	do	do	1868 and 1870	43.42
12896	J. B. Mason, Baptistown, N. J	do	1866 and 1867	13.27
12897	Wm. Rittenhouse, Baptistown, N. J	do	1867 and 1868	22.14
12898	Rich I. Frambes, Bargaintown, N. J	do	1868	.39
12899	Japhet Frambes, Bargaintown, N. J	do	1869 and 1870	11.38
12900	D. Kirkbride, Barnesborough, N. J	do	1872 and 1874	33.02
12901	Henry Johnson, Beatystown, N. J	do	1870 and 1872	27.78
	do	do	1872 and 1874	20.74
12902	Chas. B. Cornish, Bethlehem, N. J	do	1868 and 1869	25.81
12903	Wm. S. Welch, Bethlehem, N. J	do	1870	12.23
12904	Benj. Aber, Bevans, N. J	do	1866 and 1868	17.70
	do	do	1868 and 1870	3.16
	do	do	1870 and 1872	1.66
	do	do	1872 and 1874	3.54
12905	Joseph Black, Beverly, N. J	do	1866 and 1868	615.72
	do	do	1870 and 1872	135.18
12906	J. C. Gaskill, Birmingham, N. J	do	do	75.06
12907	D. P. Van Brackle, Black's Mills, N. J	do	1868	5.21
12908	Lewis P. Clayton, Black's Mills, N. J	do	1868 and 1870	28.77
12909	Mary Woodrow, Blackwoodtown, N. J	do	1866 and 1868	176.20
12910	Peter S. Huff, Bloomsburg, N. J	do	1870 and 1872	96.96
12911	Wm. Warman, Broadway, N. J	do	1866 and 1867	11.61
12912	Wm. Wiggins, Broadway, N. J	do	1872 and 1874	24.90
12913	Jesse Titman, Bridgeville, N. J	do	1866 and 1868	24.98
12914	Sylvanus D. Budd, Budd's Lake, N. J	do	do	41.50
	do	do	1868 and 1870	19.28
12915	Geo. A. Githens, Canton, N. J	do	do	5.32
12916	Chas. S. Carpenter, Carpentersville, N. J	do	1866 and 1868	25.76
	do	do	1870 and 1872	12.90
12917	A. C. Watrous, Chapel Hill, N. J	do	1866 and 1868	9.08
12918	Victor Castner, Changewater, N. J	do	do	47.44
	do	do	1868 and 1870	44.58
	do	do	1872 and 1874	8.80
12919	Alonzo Dickerson, Chester, N. J	do	1868 and 1869	64.98
12920	John North, Chew's Landing, N. J	do	1871 and 1872	13.34
12921	Thos. E. Gravatt, Clarksburgh, N. J	do	1866 and 1868	45.46
	do	do	1872	4.46
12922	D. W. Brown, Clarksborough, N. J	do	1866 and 1868	115.80
12923	Thos. H. Risler, Clinton Station, N. J	do	1866	9.53
12924	Josiah Cole, Clinton Station, N. J	do	1866 and 1868	66.68
12925	Wm. H. Havens, Coburg, N. J	do	1866 and 1867	4.81
12926	Timothy Vail, Colesville, N. J	do	1872 and 1874	20.84
12927	John J. Van Kirk, Columbia, N. J	do	1866 and 1868	10.26
	do	do	1872 and 1874	24.00
12928	J. H. Kohl, Copper Hill, N. J	do	1866 and 1868	35.24
	do	do	1870 and 1872	19.88
12929	Holcomb Warford, Croton, N. J	do	1866 and 1868	29.20
	do	do	1868 and 1870	9.76
	do	do	1870 and 1872	12.84
12930	Peter Vreeland, Danville, N. J	do	1868 and 1870	24.98
	do	do	1872 and 1874	13.24
12931	J. C. Vandevur, Dayton, N. J	do	1866 and 1868	65.86
12932	Edo. O. Leake, Deerfield Street, N. J	do	do	73.58
	do	do	1870 and 1872	29.92
	do	do	1872 and 1874	27.68
12933	Francis Lindsley, Danville, N. J	do	1868 and 1870	21.28
	do	do	1872 and 1874	31.92
12934	Belford E. Wood, Dividing Creek, N. J	do	1866 and 1868	17.66
	do	do	1870 and 1872	38.86
12935	John N. Sharp, Drakestown, N. J	do	1866 and 1868	15.32
	do	do	1870 and 1872	11.44
	do	do	1872 and 1874	7.58
12936	John Wilson, East Creek, N. J	do	1866 and 1868	38.08
	do	do	1868 and 1870	22.72
	do	do	1870 and 1872	16.68
	do	do	1872 and 1874	16.66
12937	Wm. J. Emley, Ellisdale, N. J	do	1866 and 1868	14.10
	do	do	1868 and 1870	35.56
12938	Thos. Bevis, English Creek, N. J	do	do	9.96
	do	do	1870 and 1872	40.78
12939	P. W. Stevens, Englishtown, N. J	do	1871 and 1872	25.26
12940	Henry S. Collins, Estillville, N. J	do	1870 and 1872	15.26
12941	Jno. T. Haduct, Everittstown, N. J	do	1866 and 1867	13.67

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13942	J. H. Murphy, Everittstown, N. J	Compensation of postmasters readjusted, etc.	1867 and 1868	$15.44
13943	Henry H. Schwenker, Ewan's Mills, N. J	do	1870 and 1872	106.86
13944	Joel S. Robinson, Ewing's Neck, N. J	do	1866 and 1868	25.84
	do	do	1870 and 1872	28.54
13945	Wm. H. Howell, Ewingville, N. J	do	1866 and 1868	14.44
	do	do	1872 and 1874	24.26
13946	John Vescelius, Fair Mount, N. J	do	1866 and 1868	15.10
	do	do	1872 and 1874	13.20
13947	Wm. Goodenough, Farmingdale, N. J	do	1866 and 1868	43.32
13948	Wm. Jackson, Fillmore, N. J	do	1868 and 1870	18.92
13949	Leonard Cummings, Fishing Creek, N. J.	do	1866 and 1868	6.94
	do	do	1868 and 1870	8.56
	do	do	1870 and 1872	10.62
13950	M. H. Woodhull, Flanders, N. J	do	1866 and 1867	43.09
13951	Jonas K. Smith, Flatbrookville, N. J	do	1866 and 1868	13.42
	do	do	1870 and 1872	7.50
13952	J. A. Stewart, Florence, N. J	do	1868 and 1869	38.29
13953	Jane D. Poiner, Franklin, N. J	do	1866 and 1868	94.10
	do	do	1870 and 1872	38.88
13954	Edw. M. Lonan, Forked River, N. J	do	1868	2.11
13955	Jno. C. Boner, Forked River, N. J	do	1867	8.50
13956	W. W. Greenland, Fruitland, N. J	do	1869 and 1870	323.70
	do	do	1870 and 1871	226.22
13957	N. W. Frazer, Georgetown, N. J	do	1870 and 1872	41.18
	do	do	1872 and 1874	27.08
13958	Geo. T. Swackhamer, German Valley, N. J.	do	do	3.48
13959	Geo. S. Moffett, Glassborough, N. J	do	1870 and 1872	153.56
	do	do	1872 and 1874	86.54
13960	Andrew J. Cook, Glennwood, N. J	do	do	33.90
13961	Abe Wortendyke, Godwinville, N. J	do	1872 and 1873	81.53
13962	Griffin Smith, Goshen, N. J	do	1866 and 1868	49.88
	do	do	1868 and 1870	31.87
13963	Sebastian Crowley, Green Bank, N. J	do	1866 and 1868	25.82
13964	Chas. Ditter, Green Village, N. J	do	1870 and 1872	51.88
13965	Jacob P. Fowler, Haddonfield, N. J	do	1866 and 1867	35.48
13966	Barclay Haines, Hainesport, N. J	do	1866 and 1868	3.20
	do	do	1868 and 1869	14.38
13967	A. W. Clark, jr., Hainesville, N. J	do	1866 and 1867	8.01
13968	Dan'l Cannon, Hainesville, N. J	do	1867 and 1868	13.33
13969	Howard I. Smith, Hamilton Square, N. J.	do	1866 and 1868	11.36
	do	do	1870 and 1872	61.48
13970	Edw. S. Carll, Hancock's Bridge, N. J	do	do	18.34
13971	Jno. C. Laban, Harlingen, N. J	do	1868 and 1870	40.84
	do	do	1870 and 1872	24.96
	do	do	1872 and 1874	46.08
13972	Jos. Andrews, jr., Harrisburgh, N. J	do	1870 and 1872	38.02
13973	Geo. S. Jones, Holmdel, N. J	do	1868 and 1869	7.46
13974	H. W. Magee, Holmdel, N. J	do	1869 and 1870	18.39
13975	Levi J. Howell, Howard, N. J	do	1866 and 1868	12.14
	do	do	1868 and 1870	1.64
13976	Clark J. Hurff, Hurffville, N. J	do	1873 and 1874	24.29
13977	Isaac N. Woodward, Imlaystown, N. J	do	1866 and 1868	61.88
13978	Dan'l L. Platt, Jacobstown, N. J	do	1866 and 1867	14.98
13979	Geo. Reeves, Jackson, N. J	do	1868 and 1870	93.20
13980	Benj. Mathews, Jackson's Mills, N. J	do	1870 and 1872	6.20
13981	Aaron Robbins, Jacksonville, N. J	do	do	6.81
13982	Austin B. Kelsey, Jacksonburgh, N. J	do	do	64.66
13983	John Hagaman, Juliuston, N. J	do	1867 and 1868	20.39
13984	John Frome, Karrsville, N. J	do	do	5.79
	do	do	1870 and 1872	35.78
13985	C. Van Duyn, Kingston, N. J	do	1866 and 1868	36.08
13986	Theo. B. Gibbs, Kirkwood, N. J	do	1870 and 1871	22.58
13987	Asa Suydam, Klinesville, N. J	do	1866 and 1868	1.78
	do	do	1868 and 1870	4.98
	do	do	1870 and 1871	10.17
13988	Jno. D. Faunce, Knowlton, N. J	do	1866 and 1868	33.00
	do	do	1868 and 1870	26.52
	do	do	1870 and 1872	20.26
	do	do	1872 and 1874	40.14
13989	Jno. Layton, jr., Layton, N. J	do	1868 and 1870	24.32
	do	do	1870 and 1872	18.44
	do	do	1872 and 1874	11.98
13990	Abner P. Fox, Leeds Point, N. J	do	1868	2.37
	do	do	1868 and 1870	15.80
13991	Wm. H. Thompson, Leedsville, N. J	do	1868	12.25
13992	Dan'l G. Carlisle, Leesburgh, N. J	do	1870 and 1872	42.67

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
13993	Thos. Leonard, Leonardsville, N. J	Compensation of postmasters readjusted, etc.	1866 and 1868	$26.62
	do	do	1868 and 1870	8.68
13994	W. P. Jerolaman, Liberty Corner, N. J	do	1866 and 1868	38.14
13995	Ezra W. Overton, Libertyville, N. J	do	1868 and 1870	6.00
	do	do	1870 and 1872	8.22
13996	Meeker Wood, Linden, N. J	do	1870	71.47
13997	Jno. M. Chamberlin, Locktown, N. J	do	1870 and 1872	8.08
	do	do	1872 and 1874	5.48
13998	Augustus S. Johnson, Lower Bank, N. J	do	1866 and 1868	25.22
13999	J. C. Stokey, Lower Skuankum, N. J	do	1866 and 1868	75.32
	do	do	1872 and 1874	16.40
14000	Wm. C. Bishop, Lumberton, N. J	do	1866	4.92
14001	John E. Hunt, Manalapan, N. J	do	1870 and 1871	23.85
14002	W. H. Heyer, Marlborough, N. J	do	1866 and 1867	45.80
	do	do	1869 and 1870	26.95
	do	do	1872 and 1873	7.87
14003	A. Mundy, Martinsville, N. J	do	1866 and 1868	14.90
	do	do	1868 and 1870	12.44
14004	Frederick Kanouse, Mead's Basin, N. J	do	1866 and 1868	9.94
14005	Ann D. Havens, Metedeconk, N. J	do	do	30.88
14006	Isaac E. Van Gieson, Metuchen, N. J	do	do	42.10
	do	do	1868 and 1870	170.54
	do	do	1870 and 1271	79.86
14007	John N. Voorhees, Middlebush, N. J	do	1872 and 1874	32.72
14008	Samuel L. Taylor, Middletown, N. J	do	1867 and 1868	58.92
14009	D. P. Van Brackle, Middletown, N. J	do	1866 and 1867	17.70
14010	Elias M. Bartles, Middle Valley, N. J	do	1866 and 1868	27.02
14011	John C. Welsh, Middle Valley, N. J	do	1872 and 1874	13.34
14012	Oscar Andress, Middleville, N. J	do	1866 and 1868	18.42
	do	do	1870 and 1872	8.40
14013	Jacob S. Young, Milford, N. J	do	1866 and 1868	60.64
14014	Philip S. Garis, Millbrook, N. J	do	do	22.12
	do	do	1872 and 1874	4.20
14015	Joseph H. Bower, Mount Ephraim, N. J	do	1871 and 1872	4.17
14016	James Gibson, Mullica Hill, N. J	do	1872 and 1874	78.12
14017	Thomas D. Eckerson, New Durham, N. J	do	1866 and 1868	38.46
	do	do	1870 and 1872	12.94
14018	Jacob Dunn, New Hampton, N. J	do	do	38.80
14019	E. Oliphant, New Lisbon, N. J	do	1866 and 1868	7.40
	do	do	1868 and 1870	20.42
	do	do	1870 and 1872	36.60
	do	do	1872 and 1874	14.12
14020	John T. Wilcox, New Providence, N. J	do	1866 and 1868	40.76
	do	do	1870 and 1872	60.68
14021	Peter I. Brokan, Neshanic, N. J	do	1872	4.22
14022	Caleb V. Weller, New Village, N. J	do	1866 and 1868	38.34
	do	do	1870 and 1871	10.93
14023	Jos. B. Smith, North Branch, N. J	do	1866 and 1868	32.74
	do	do	1868 and 1869	49.24
14024	David Nangle, Norwood, N. J	do	1870 and 1872	140.33
14025	John George, Ogdensburgh, N. J	do	1870	18.56
	do	do	1870 and 1872	20.72
	do	do	1872 and 1874	66.36
14026	H. J. Disbrow, Old Bridge, N. J	do	1866 and 1868	34.62
14027	Moses C. Shoemaker, Pahaquany, N. J	do	1872 and 1874	.94
14028	Anna J. Toy, Palmyra, N. J	do	1866 and 1868	89.84
	do	do	1868 and 1870	93.20
	do	do	1870	11.86
14029	L. S. Hennion, Parsippany, N. J	do	1870	4.17
14030	F. Wortendyke, jr., Pascack, N. J	do	1866 and 1868	24.08
14031	Thomas Newell, Passaic, N. J	do	1869 and 1870	80.62
	do	do	1872 and 1874	240.16
14032	Wm. L. Andruss, Passaic, N. J	do	1868 and 1869	134.37
14033	Shadrach Pedrick, Pedricktown, N. J	do	1866 and 1868	40.52
	do	do	1870 and 1872	49.46
	do	do	1872 and 1874	42.72
14034	Benajah Antrim, Pemberton, N. J	do	1866	8.61
14035	Hugh E. Anderson, Penwell, N. J	do	1866 and 1867	18.57
14036	Jacob Stires, jr., Perryville, N. J	do	1866 and 1868	28.88
	do	do	1872	.66
14037	George M. Elwell, Pitt's Grove, N. J	do	1872 and 1874	113.48
14038	David J. Perrine, Plainsborough, N. J	do	1868 and 1869	10.24
14039	W. S. Miller, Pleasant Mills, N. J	do	1870 and 1872	68.94
14040	John A. Cole, Pleasant Run, N. J	do	1866 and 1868	7.98
	do	do	1870 and 1872	17.74
	do	do	1872 and 1874	8.08
14041	Tyler Allen, Point Pleasant, N. J	do	1870 and 1872	96.94

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14042	C. N. Gray, Pompton, N. J	Compensation of postmasters readjusted, etc.	1868	$16.97
14043	Geo. F. Woolston, Port Colden, N. J	do	1868 and 1870	16.28
14044	Serving Potter, Pottersville, N. J	do	1866 and 1868	21.34
	do	do	1870 and 1872	20.84
14045	Derrick G. Davison, Prospect Plains, N. J.	do	1866 and 1868	60.74
14046	R. H. Trimmer, Quakertown, N. J	do	1866 and 1867	11.68
14047	Wm. J. Pullis, Ramsey's, N. J	do	1866 and 1868	22.46
14048	Robt. R. Smith, Reaville, N. J	do	1866 and 1867	21.05
14049	Isaac Satterthwait, Recklesstown, N. J	do	1866 and 1868	34.04
	do	do	1868 and 1870	21.50
14050	Jno. C. Yard, Robbinsville, N. J	do	do	5.88
14051	Henry D. Tuttle, Rockaway, N. J	do	1870 and 1872	195.46
14052	Caleb F. Wolverton, Sand Brook, N. J	do	1866 and 1868	10.06
	do	do	1868 and 1870	3.16
	do	do	1870 and 1872	9.52
	do	do	1872 and 1874	10.10
14053	G. W. Mason, Sergeantsville, N. J	do	1866 and 1868	82.90
14054	Andrew F. Rodgers, Spark River, N. J	do	1870 and 1872	40.74
14055	Jonathan Albertson, Smith's Landing, N. J.	do	1866 and 1868	27.64
	do	do	1868 and 1870	36.24
	do	do	1870 and 1872	57.12
14056	Jas. B. Titman, Sparta, N. J	do	do	44.80
14057	Wm. T. Leport, Stanhope, N. J	do	1867 and 1868	41.50
14058	Enoch T. Caskey, Stephensburgh, N. J	do	1866 and 1868	39.12
	do	do	1870 and 1872	15.30
	do	do	1872	4.14
14059	Alvah R. Kase, Stewartsville, N. J	do	1866 and 1868	70.86
	do	do	1870 and 1872	37.04
	do	do	1872 and 1874	42.80
14060	James Woods, Stockholm, N. J	do	1866 and 1868	85.30
14061	Geroham Lambert, Stockton, N. J	do	1868 and 1869	17.62
14062	J. C. Buck, Suckasunny, N. J	do	1866 and 1867	45.50
14063	Martin E. Hough, Swartswood, N. J	do	1866 and 1868	11.80
	do	do	1868 and 1870	8.62
14064	Jno. D. Van Liew, Three Bridges, N. J	do	1872 and 1874	26.00
14065	David A. Holmes, Tinton Falls, N. J	do	1866 and 1868	23.00
14066	Jas. P. Copperthwait, Tom's River, N. J.	do	1870 and 1872	217.02
	do	do	1872 and 1874	282.06
14067	Wm. F. Henry, Townsbury, N. J	do	1867 and 1868	8.25
14068	Nelson Vliet, Townsbury, N. J	do	1866 and 1867	4.95
14069	Wm. Hewitt, Townsend Inlet, N. J	do	1867 and 1868	11.26
	do	do	1868 and 1870	59.86
14070	Theophilus T. Price, Tuckerton, N. J	do	1866 and 1868	53.70
14071	Simeon P. Stryker, Tumble, N. J	do	1870 and 1872	18.20
	do	do	1872 and 1874	6.46
14072	Andrew D. Turner, Turnerville, N. J	do	1867 and 1868	9.96
	do	do	1868 and 1870	26.54
	do	do	1870 and 1872	4.88
14073	O. M. Townley, Union, N. J	do	1868 and 1870	111.44
	do	do	1870 and 1872	154.82
	do	do	1872 and 1874	162.64
14074	Edward Baldwin, Uniontown, N. J	do	1866	2.87
14075	A. C. Howell, Vienna, N. J	do	1870 and 1872	21.00
	do	do	1868 and 1870	26.38
	do	do	1872 and 1874	42.14
14076	Jacob S. Roe, Wallpack Centre, N. J	do	1870 and 1872	9.66
	do	do	1872 and 1874	8.20
14077	Nelson Hulbert, Walnut Grove, N. J	do	do	21.06
14078	D. Vanscoten, Walnut Valley, N. J	do	1866 and 1868	12.38
	do	do	1872 and 1874	6.28
14079	James Edwards, Waretown, N. J	do	1866 and 1868	22.78
14080	Dan'l Bowman, Warrenville, N. J	do	1870 and 1872	12.44
14081	Brazier Wescoat, Waterford Works, N. J.	do	1868	7.21
14082	Wm. C. Porter, Waterford Works, N. J	do	1868 and 1870	34.94
14083	Geo. Hunt, Wanayanda, N. J	do	1866 and 1868	39.00
	do	do	1868 and 1870	14.28
	do	do	1870 and 1872	18.78
	do	do	1872 and 1874	11.68
14084	Richard Colfox, West Milford, N. J	do	1867 and 1868	23.06
	do	do	1868 and 1870	22.92
14085	Rockhill Robeson, Weston, N. J	do	1866 and 1868	17.06
	do	do	1868 and 1870	54.84
	do	do	1870	4.06
14086	A. M. Wilkins, Westville, N. J	do	1868	3.29
	do	do	1869 and 1870	12.99
14087	E. C. Mount, Westville, N. J	do	1870	2.16

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14087	R. C. Mount, Westville, N. J	Compensation of postmasters readjusted, etc.	1872 and 1874	$8.88
14088	Wm. H. Kitchel, Whippany, N. J	do	1868 and 1870	47.96
	do	do	1870 and 1872	39.68
	do	do	1872 and 1874	43.20
14089	Edw. F. Vanhise, Windsor, N. J	do	1870 and 1872	21.02
14090	Jno. F. Wood, Woodport, N. J	do	1868 and 1870	67.59
14091	Peter Hoagland, Woodsville, N. J	do	1866 and 1868	33.18
14092	John Riley, Woodsville, N. J	do	1868	4.74
	do	do	1868 and 1869	4.53
14093	A. T. Ege, Woodsville, N. J	do	1869 and 1870	6.75
	do	do	1870 and 1872	47.16
14094	Geo. H. Harker, Wrightstown, N. J	do	1868 and 1869	5.04
14095	Ellis Harris, Wrightstown, N. J	do	1872 and 1874	30.93
	do	do	1869 and 1870	6.14
14096	Henry B. Courser, Wykertown, N. J	do	1872 and 1874	43.30
14097	Clark Hutchinson, Yardville, N. J	do	1868 and 1870	19.02
	do	do	1870 and 1872	51.36
14098	L. Maxwell. Cimarron, N. Mex	do	1866 and 1868	4.30
	do	do	1868 and 1870	198.66
14099	Wm. W. Lewis, Peralta, N. Mex	do	1870 and 1872	31.34
14100	M. A. Breeden, Santa Fé, N. Mex	do	1873 and 1874	297.08
14101	Seth A. Abbott, Abbotts's Corner, N.Y	do	1872 and 1874	22.56
14102	Daniel Ordway, Adrian, N. Y	do	1866	14.72
14103	N. S. Baker, Adrian, N. Y	do	1866 and 1868	71.07
	do	do	1868 and 1870	22.30
14104	Sam'l C. Bateman, Alabama, N. Y	do	1866 and 1868	63.38
14105	Archibald McKillip, Alder Brook, N.Y	do	do	17.20
14106	Michael Killinger, Alden Centre, N. Y	do	do	19.28
14107	I. M. McClusky, Alder Creek, N. Y	do	1868 and 1870	24.74
	do	do	1872 and 1874	22.84
14108	W. R. Burdick, Alfred, N. Y	do	1866	15.21
14109	A. B. Rumsey, Alpine, N. Y	do	1866 and 1868	22.66
14110	Dan'l Damon, Allen, N. Y	do	1872 and 1874	4.18
14111	James C. Burr, Allen Centre, N.Y	do	1866 and 1868	5.18
11112	Wm. Spraker, jr., Allegany, N. Y	do	1866	19.57
14113	Wm. S. Oliver, Alma, N. Y	do	1868 and 1870	26.06
	do	do	1866 and 1868	19.28
14114	Patrick Casey, Altona, N. Y	do	do	29.76
	do	do	1868 and 1870	62.52
	do	do	1870 and 1871	23.16
14115	Obed B. Taylor, Altona, N. Y	do	1871 and 1872	23.16
14116	George Clark, Altay, N. Y	do	1866 and 1868	93.96
	do	do	1868 and 1870	29.82
14117	J. T. Parsons, Amagansett, N. Y	do	1866	5.75
14118	N. H. Edwards, Amagansett, N. Y	do	1866 and 1868	28.12
14119	A. J. Niles, Amber, N. Y	do	do	11.04
	do	do	1868 and 1870	19.44
	do	do	1870 and 1872	18.56
	do	do	1872 and 1874	24.50
14120	Henry S. Miller, Amboy Centre, N. Y	do	1866 and 1868	76.16
14121	David J. Wilson, Amboy Centre, N. Y	do	1870 and 1871	11.81
14122	R. J. Cornelius, Amityville, N. Y	do	1868	7.98
	do	do	1868 and 1869	58.66
14123	Ancariah Hitchcock, Amenia Union, N. Y.	do	1868 and 1870	117.90
14124	Henry Hoysradt, Ancram Lead Mines, N. Y.	do	do	13.58
	do	do	1870 and 1872	29.84
	do	do	1872 and 1874	46.84
14125	Geo. B. Greene, Andrusville, N. Y	do	1866	6.60
14126	W. W. Clark, Andrusville, N. Y	do	1866 and 1867	23.77
14127	J. B. Slater, Arcade, N. Y	do	1867 and 1868	95.53
14128	Jno. Dillenbuck, Arcadia, N. Y	do	1868 and 1870	63.50
14129	Orrville Hodge, Argusville, N. Y	do	1866 and 1868	37.52
	do	do	1868 and 1870	20.64
	do	do	1870 and 1872	26.44
	do	do	1872 and 1874	44.82
14130	Lot Reznor, Arkport, N. Y	do	do	443.82
14131	James Hopkins, Armonk, N. Y	do	1866 and 1868	69.98
	do	do	1870 and 1872	23.28
14132	D. W. Odell, Arthursburgh, N. Y	do	1872 and 1874	20.92
14133	J. D. Labaree, Ashford, N. Y	do	1866 and 1868	50.32
14134	Albert Tuttle, Ashford, N. Y	do	do	79.58
14135	Abeal Pendell, Athol, N. Y	do	1866	12.60
14136	Miles Gill, Athol, N. Y	do	1871 and 1872	6.21
14137	Lewis Thorne, Attlebury, N. Y	do	1866 and 1867	14.67
14138	Halsey W. Taylor, Aurelius, N. Y	do	1868 and 1870	25.74
14139	D. D. Dickerson, Ava, N. Y	do	1866 and 1867	12.01
14140	Wm. O. Starr, Ava, N. Y	do	1867 and 1868	24.01

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14140	Wm. O. Starr, Ava, N. Y	Compensation of postmasters readjusted, etc.	1868 and 1870	$22.90
	do	do	1872 and 1874	21.82
14141	John Babcock, Babcock Hill, N. Y	do	1866 and 1867	10.60
14142	E. L. Austin, Babcock Hill, N. Y	do	1867 and 1868	10.60
	do	do	1870 and 1872	5.60
	do	do	1872 and 1874	7.32
14143	D. S. Wilkins, Baldwinsville, N. Y	do	1866 and 1868	315.54
14144	Wells S. Dickinson, Bangor, N. Y	do	1868	17.91
	do	do	1868 and 1870	24.38
	do	do	1870 and 1872	28.68
14145	M. B. Bryant, Barboursville, N. Y	do	1866 and 1867	3.83
14146	H. E. Newell, Barkersville, N. Y	do	1869 and 1870	8.90
	do	do	1872 and 1874	9.40
14147	Joseph Plank, Barnes' Corners, N. Y	do	1866 and 1868	36.26
14148	H. M. Gibson, Barre Centre, N. Y	do	1866 and 1867	14.70
14149	Cranston Hewitt, Barrington, N. Y	do	1866 and 1868	43.20
	do	do	1870 and 1872	7.88
	do	do	1872 and 1874	13.38
14150	L. D. Fuller, Barryville, N. Y	do	1868 and 1869	28.51
14151	Edmond Hayden, Batchellersville, N. Y	do	1866 and 1867	26.28
14152	S. R. Clock, Bay Shore, N. Y	do	1868 and 1870	65.78
14153	James A. Schultz, Beaver Brook, N. Y	do	do	9.82
14154	Martin R. Lefever, Beaver Falls, N. Y	do	do	11.14
	do	do	1870 and 1872	19.60
14155	Barton B. Ellis, Beach Ridge, N. Y	do	1866 and 1868	12.52
	do	do	1868	1.19
14156	R. J. Zimmerman, Bedford, N. Y	do	1866 and 1868	57.06
	do	do	1870 and 1872	70.86
14157	Phillip Elbert, Beechwood, N. Y	do	1866 and 1868	17.06
	do	do	1868 and 1870	10.36
	do	do	1871 and 1872	5.61
14158	John S. Van Wyck, Beekman, N. Y	do	1866 and 1868	39.34
	do	do	1868 and 1870	19.50
14159	Henry L. Doming, Beekmantown, N. Y	do	1870 and 1872	29.44
14160	J. F. Powell, Belcher, N. Y	do	1868 and 1869	4.33
14161	Jas. McKnight, Belcher, N. Y	do	1869 and 1870	7.24
	do	do	1870 and 1872	36.96
	do	do	1872 and 1874	10.20
14162	Thos. Machan, Belle Isle, N. Y	do	1866 and 1868	46.34
	do	do	1872 and 1874	92.36
14163	Robert Mackell, Bellvale, N. Y	do	1866 and 1868	87.26
14164	H. W. Hibbard, Belvidere, N. Y	do	do	39.50
14165	Wm. C. Alger, Bennett's Creek, N. Y	do	do	10.74
	do	do	1870 and 1872	5.58
14166	Philo Durkee, Bennington, N. Y	do	1866 and 1867	13.87
14167	August Liphardt, Bergholtz, N. Y	do	1856	2.58
14168	B. S. Watrous, Berkshire, N Y	do	1867 and 1868	68.66
14169	Geo. C. Royce, Berkshire, N. Y	do	1866 and 1867	41.19
14170	E. R. Crandall, Bernhard's Bay, N. Y	do	1866 and 1868	44.96
	do	do	1870 and 1872	82.64
14171	John P. Roosa, Bethel, N. Y	do	1866 and 1868	63.70
	do	do	1868 and 1870	58.70
	do	do	1870 and 1872	24.00
14172	H. C. Gifford, Berlin, N. Y	do	1866 and 1868	69.38
14173	Austin B. Hitchcock, Big Hollow, N. Y	do	1872 and 1874	2.54
	do	do	1870 and 1872	2.40
	do	do	1868 and 1870	4.20
	do	do	1866 and 1868	8.90
14174	James Craig, Big Tree Corners, N. Y	do	do	4.50
14175	Thomas Rogers, Black Brook, N. Y	do	1871 and 1872	30.66
	do	do	1872 and 1873	17.60
14176	Hiram W. Stetson, Black Brook, N. Y	do	1873 and 1874	40.10
14177	Altha I. Hazelton, Black River, N. Y	do	1870 and 1872	27.06
14178	Rilus Eastman, Bleecker, N. Y	do	1866 and 1868	23.14
	do	do	1868 and 1870	34.50
14179	Chas. B. Van Keuren, Bloomingburgh, N. Y.	do	1866	7.41
14180	Cornelius Becker, Bloomville, N. Y	do	1870 and 1872	31.10
	do	do	1872 and 1874	45.26
14181	Justus Gray, Blossvale, N. Y	do	1866 and 1868	34.74
	do	do	1868 and 1870	53.26
	do	do	1870 and 1872	35.44
	do	do	1872 and 1874	50.40
14182	J. Warren Brown, Bluff Point, N. Y	do	1866 and 1868	15.40
	do	do	1868 and 1870	18.30
14183	J. W. Hoyt, Bolivar, N. Y	do	1866 and 1868	144.00
14184	Warren Whitney, Bombay, N. Y	do	do	43.20
14185	Geo. W. Davis, Bombay, N. Y	do	do	4.20
	do	do	1870 and 1872	20.78

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14287	Harvey J. Tucker, Collins, N. Y	Compensation of postmasters readjusted, etc.	1872	$6.44
14288	Curtis L. Bates, Collins Centre, N. Y	do	do	7.16
	do	do	1872 and 1874	48.90
14289	Luther Cole, Collingwood, N. Y	do	1868	4.89
14290	Avery R. Palmer, Collingwood, N. Y	do	1869 and 1870	14.68
	do	do	1870 and 1872	52.20
	do	do	1872 and 1874	20.02
14291	Dennis Blackman, Columbus, N. Y	do	1870	3.64
14292	Jos. H. Rowland, Conesus, N. Y	do	1866 and 1868	15.14
14293	Cyrus Thacher, Conewango, N. Y	do	do	19.70
	do	do	1870 and 1872	9.48
14294	Peter Cauchman, Conesville, N. Y	do	do	14.00
	do	do	1872 and 1873	35.22
14295	M. H. Wilcox, Conklingville, N. Y	do	1871 and 1872	34.40
14296	Jno. Fellows, Copake, N. Y	do	1866 and 1868	91.60
14297	Lemuel Pomeroy, Copake Iron Works, N. Y.	do	1867 and 1868	23.65
14298	G. A. Scoveil, Copenhagen, N. Y	do	1866 and 1868	212.70
14299	David Hallock, Constantia Centre, N. Y.	do	do	12.70
14300	Tully Houghton, Corinth, N. Y	do	1866 and 1867	67.64
14301	Ambrose Hickok, Corinth, N. Y	do	1867 and 1868	40.57
14302	Benj. W. Hubbard, Cornwallville, N. Y	do	1866 and 1868	20.26
14303	Chas. Blair, Cottage, N. Y	do	do	25.58
	do	do	1868 and 1869	19.92
14304	Smith Somes, Coveville, N. Y	do	1866 and 1868	17.56
	do	do	1868 and 1870	29.62
	do	do	1870 and 1872	6.22
14305	Wm. H. Ireland, Coventryville, N. Y	do	1866 and 1868	44.66
	do	do	1868 and 1870	41.22
14306	C. G. Cowles, Cowlestonec, N. Y	do	1866 and 1868	17.58
14307	Asa Rice, Chancesville, N. Y	do	1870 and 1872	12.12
14308	Jacob A. Van Wagner, Creek Locks, N. Y.	do	1867 and 1868	12.81
	do	do	1870 and 1872	23.34
14309	Henry L. Haight, Crescent, N. Y	do	1866 and 1868	54.56
	do	do	1870 and 1872	36.76
14310	E. Frost, Croton Landing, N. Y	do	1868 and 1870	48.30
14311	H. J. Dunn, Crown Point Centre, N. Y	do	1868	32.60
	do	do	1868 and 1870	55.88
14312	John Stringham, Crum Elbow, N. Y	do	do	39.48
14313	Orrin F. Goldsmith, Cutchogue, N. Y	do	1866 and 1868	67.62
	do	do	1868 and 1870	50.10
14314	Adelbert Fuller, Cuyler, N. Y	do	1869 and 1870	8.64
	do	do	1872 and 1874	20.88
14315	Loring Chappell, Dannemora, N. Y	do	1866 and 1868	57.62
14316	Hiram Gibbons, Darmansville, N. Y	do	do	6.54
	do	do	1870 and 1872	15.36
	do	do	1872 and 1873	10.94
14317	A. H. Hubbard, Davenport Centre, N. Y.	do	1870 and 1872	39.24
14318	Elbert M. Somers, Deansville, N. Y	do	1866 and 1868	66.54
	do	do	1868 and 1869	79.20
14319	Stoddard Hammond, jr., De Bruce, N. Y.	do	1868 and 1870	44.06
	do	do	1870 and 1872	30.10
	do	do	1872 and 1874	28.96
14320	Daniel Day, Decatur, N. Y	do	1868	4.10
	do	do	1868 and 1870	10.08
	do	do	1870 and 1872	8.86
14321	Geo. De Graff, Defreestville, N. Y	do	1866 and 1868	31.60
14322	L. D. Townsley, De Kalb, N Y	do	1870 and 1872	22.30
14323	James R. Fenner, Delphi, N. Y	do	1871 and 1872	14.79
14324	James Johnson, Denning, N. Y	do	1866 and 1868	3.14
	do	do	1868 and 1870	11.38
14325	Duane Ormsby, Depauville, N. Y	do	1866 and 1868	103.22
	do	do	1868 and 1870	43.30
	do	do	1870 and 1872	23.63
14326	Geo. H. Fleetham, De Peyster, N. Y	do	do	18.08
	do	do	1869 and 1870	15.96
14327	A. V. Bentley, De Ruyter, N. Y	do	1866 and 1868	125.22
	do	do	1872 and 1874	213.10
14328	Robert Thompson, Dexter, N. Y	do	1866 and 1868	247.44
	do	do	1868 and 1870	61.46
	do	do	1870 and 1872	57.16
	Robert Thompson, Dexter, N. Y	do	1872 and 1874	55.90
14329	Josiah Bailey, Dickinson Centre, N. Y	do	1866 and 1868	90.42
14330	Franklin Pool, Dickersonville, N. Y	do	1870 and 1872	4.06
14331	A. H. Dutcher, Dover Plains, N. Y	do	1868 and 1870	265.40
14332	C. B. Doolittle, Doraville, N. Y	do	1866 and 1868	15.18
	do	do	1868 and 1870	8.84
	do	do	1870 and 1872	36.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14235	C. W. Taylor, Carlisle, N. Y	Compensation of postmasters readjusted, etc.	1870 and 1872	$30.78
	do	do	1872 and 1874	32.18
14236	Sharrard Slater, Caroline Centre, N. Y	do	1866 and 1868	89.66
14237	Gilbert Budd, Carthage Landing, N. Y	do	do	15.72
14238	Sebastian Comstock, Cascade Valley, N. Y	do	do	9.64
	do	do	1870 and 1872	6.66
14239	Judson W. Hopeman, Cato, N. Y	do	do	58.80
14240	Wm. D. Gilbert, Caton, N. Y	do	do	17.14
14241	Lucas H. Maltbie, Cattaraugus, N. Y	do	1873 and 1874	45.35
14242	Leroy Wood, Cayuta, N. Y	do	1866 and 1868	19.36
	do	do	1870 and 1872	20.02
	do	do	1872 and 1874	13.98
14243	E. M. W. Nye, Cayutaville, N. Y	do	1866 and 1868	8.75
14244	Barnet S. Winne, Cedar Hill, N. Y	do	1868 and 1870	16.52
	do	do	1871	2.07
14245	Wm. K. R. Gird, Cedar Lake, N. Y	do	1867 and 1868	16.95
14246	Benj. E. Davis, Cedarville, N. Y	do	1869 and 1870	63.43
	do	do	1870 and 1872	117.50
	do	do	1872 and 1874	150.52
14247	Mortimor Hull, Centre Berlin, N. Y	do	1868 and 1870	6.60
	do	do	1870 and 1872	28.98
14248	Lorenzo D. Vail, Centre Moriches, N. Y	do	1866	3.85
14249	Henry Martin, Centre Village, N. Y	do	do	9.88
14250	Theodore Pierce, Centre Village, N. Y	do	1866 and 1868	69.16
14251	D. H. Brooks, Centreville, N. Y	do	do	42.88
	do	do	1868 and 1870	27.42
14252	Wm. P. Fowler, Centre White Creek, N. Y.	do	1866 and 1868	21.82
14253	Ambrose S. Babcock, Champion, N. Y	do	1870 and 1872	29.33
14254	Ira Cooper, jr., Chapinville, N. Y	do	1872 and 1874	17.19
14255	James A. Clark, Charlotte Centre, N. Y	do	1866 and 1868	95.66
14256	Hosea B. Cummings, Charlotte Centre, N. Y.	do	1872 and 1874	13.08
14257	Simeon Lape, Charlotteville, N. Y	do	do	83.02
14258	Seymour Broughton, Charlotteville, N. Y.	do	1868	34.44
14259	John Cadman, Chatham Four Corners, N. Y.	do	1870 and 1871	253.96
14260	Mathew J. Reynolds, Chateaugay Lake, N. Y.	do	1871 and 1872	20.89
14261	Geo. H. Barber, Chazy, N. Y	do	1866 and 1867	143.16
14262	Jno. L. Weatherhead, Chestertown, N. Y.	do	1866 and 1868	175.15
	do	do	1868 and 1869	25.59
14263	W. E. Griswold, Cherry Creek, N. Y	do	1870 and 1872	69.30
14264	Wm. Duffin, Cherry Valley, N. Y	do	1866 and 1867	78.08
14265	B. F. Winchell, Chittenango Falls, N. Y	do	1868 and 1870	12.60
	do	do	1870 and 1872	41.46
	do	do	1872 and 1874	23.80
14266	Albert Boomhower, Churubusco, N. Y	do	1868 and 1870	87.18
14267	Harrison Bull, Circleville, N. Y	do	1866 and 1868	22.58
	do	do	1868 and 1870	13.46
	do	do	1870 and 1872	14.06
	do	do	1872 and 1874	43.76
14268	Daniel Wightman, Clarksburgh, N. Y	do	1866 and 1868	9.38
14269	Adam Moore, Clarkson, N. Y	do	1867 and 1868	75.42
14270	Chas. Seib, Clarence, N. Y	do	1869 and 1870	25.05
	do	do	1870 and 1872	81.76
14271	Andrew Metz, Clarence Centre, N. Y	do	1866 and 1868	66.48
14272	Harrison A. Wood, Claysburgh, N. Y	do	1870 and 1872	7.59
14273	D. Williams, Cleveland, N. Y	do	1872 and 1874	37.88
14274	Ebenezer E. Howard, Clifton, N. Y	do	1868 and 1870	45.86
	do	do	1872 and 1874	21.98
14275	E. G. Morse, Clifton Park, N. Y	do	1866 and 1868	50.38
14276	Jno. Carpenter, Clifton Park, N. Y	do	1866 and 1867	34.97
14277	Elisha G. Morse, Clifton Park, N. Y	do	1868 and 1870	40.42
	do	do	1870 and 1872	31.78
	do	do	1872	6.84
14278	Jacob Cheesman, Clinton Corners, N. Y	do	1866 and 1868	17.22
14279	David D. Vincent, Clove, N. Y	do	do	22.84
	do	do	1870 and 1872	6.04
14280	W. B. Gleason, Clymer, N. Y	do	1866 and 1868	98.92
14281	N. B. Gleason, Clymer, N. Y	do	1872 and 1874	74.48
14282	Wm. B. Hull, Coeymans, N. Y	do	1866 and 1868	88.44
14283	Edward Shear, Coeymans Hollow, N. Y.	do	1870 and 1872	18.28
14284	James H. Goodale, Coldenham, N. Y	do	1872 and 1874	278.24
	do	do	1870 and 1872	58.36
14285	Cameron Moore, Cold Brook, N. Y	do	do	66.94
14286	Edwin B. Avery, Cold Water, N. Y	do	1872 and 1874	10.48
14287	Harvey J. Tucker, Collins, N. Y	do	1870 and 1872	24.00

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14287	Harvey J. Tucker, Collins, N. Y	Compensation of postmasters readjusted, etc.	1872	$6.44
14288	Curtis I. Bates, Collins Centre, N. Y	do	do	7.16
	do	do	1872 and 1874	48.90
14289	Luther Cole, Collingwood, N. Y	do	1868	4.89
14290	Avery R. Palmer, Collingwood, N. Y	do	1869 and 1870	14.68
	do	do	1870 and 1872	52.20
	do	do	1872 and 1874	20.02
14291	Dennis Blackman, Columbus, N. Y	do	1870	3.64
14292	Jos. H. Rowland, Conesus, N. Y	do	1866 and 1868	15.14
14293	Cyrus Thacher, Conewango, N. Y	do	do	19.70
	do	do	1870 and 1872	9.48
14294	Peter Cauchman, Conesville, N. Y	do	do	14.00
	do	do	1872 and 1873	35.22
14295	M. H. Wilcox, Conklingville, N. Y	do	1871 and 1872	34.40
14296	Jno. Fellows, Copake, N. Y	do	1866 and 1868	91.60
14297	Lemuel Pomeroy, Copake Iron Works, N. Y.	do	1867 and 1868	23.65
14298	G. A. Scoveil, Copenhagen, N. Y	do	1866 and 1868	212.70
14299	David Hallock, Constantia Centre, N. Y	do	do	12.70
14300	Tully Houghton, Corinth, N. Y	do	1866 and 1867	67.64
14301	Ambrose Hickok, Corinth, N. Y	do	1867 and 1868	40.57
14302	Benj. W. Hubbard, Cornwallville, N. Y	do	1866 and 1868	20.26
14303	Chas. Blair, Cottage, N. Y	do	do	25.58
	do	do	1868 and 1869	19.92
14304	Smith Somes, Coveville, N. Y	do	1866 and 1868	17.56
	do	do	1868 and 1870	29.62
	do	do	1870 and 1872	6.22
14305	Wm. H. Ireland, Coventryville, N. Y	do	1866 and 1868	44.66
	do	do	1868 and 1870	41.22
14306	C. G. Cowles, Cowlestonec, N. Y	do	1866 and 1868	17.58
14307	Asa Rice, Cranesville, N. Y	do	1870 and 1872	12.12
14308	Jacob A. Van Wagner, Creek Locks, N. Y.	do	1867 and 1868	12.81
	do	do	1870 and 1872	23.34
14309	Henry L. Haight, Crescent, N. Y	do	1866 and 1868	54.56
	do	do	1870 and 1872	36.76
14310	E. Frost, Croton Landing, N. Y	do	1868 and 1870	48.30
14311	H. J. Dunn, Crown Point Centre, N. Y	do	1868	32.60
	do	do	1868 and 1870	55.88
14312	John Stringham, Crum Elbow, N. Y	do	do	39.48
14313	Orrin F. Goldsmith, Cutchogue, N. Y	do	1866 and 1868	67.62
	do	do	1868 and 1870	50.10
14314	Adelbert Fuller, Cuyler, N. Y	do	1869 and 1870	8.64
	do	do	1872 and 1874	20.88
14315	Loring Chappell, Dannemora, N. Y	do	1866 and 1868	57.62
14316	Hiram Gibbons, Darmansville, N. Y	do	do	6.54
	do	do	1870 and 1872	15.36
	do	do	1872 and 1873	10.94
14317	A. H. Hubbard, Davenport Centre, N. Y	do	1870 and 1872	39.24
14318	Elbert M. Somers, Deansville, N. Y	do	1866 and 1868	66.54
	do	do	1868 and 1869	79.20
14319	Stoddard Hammond, jr., De Bruce, N. Y	do	1868 and 1870	44.06
	do	do	1870 and 1872	30.10
	do	do	1872 and 1874	28.96
14320	Daniel Day, Decatur, N. Y	do	1868	4.10
	do	do	1868 and 1870	10.08
	do	do	1870 and 1872	8.86
14321	Geo. De Graff, Defreestville, N. Y	do	1866 and 1868	31.60
14322	L. D. Townsley, De Kalb, N Y	do	1870 and 1872	22.30
14323	James R. Fenner, Delphi, N. Y	do	1871 and 1872	14.79
14324	James Johnson, Denning, N. Y	do	1866 and 1868	3.14
	do	do	1868 and 1870	11.38
14325	Duane Ormsby, Depauville, N. Y	do	1866 and 1868	103.22
	do	do	1868 and 1870	43.30
	do	do	1870 and 1872	23.63
14326	Geo. H. Fleetham, De Peyster, N. Y	do	do	18.08
	do	do	1869 and 1870	15.96
14327	A. V. Bentley, De Ruyter, N. Y	do	1866 and 1868	125.22
	do	do	1872 and 1874	213.10
14328	Robert Thompson, Dexter, N. Y	do	1866 and 1868	247.44
	do	do	1868 and 1870	61.46
	do	do	1870 and 1872	57.16
	Robert Thompson, Dexter, N. Y	do	1872 and 1874	55.90
14329	Josiah Bailey, Dickinson Centre, N. Y	do	1866 and 1868	90.42
14330	Franklin Pool, Dickersonville, N. Y	do	1870 and 1872	4.06
14331	A. H. Dutcher, Dover Plains, N. Y	do	1868 and 1870	265.40
14332	C. B. Doolittle, Doraville, N. Y	do	1866 and 1868	15.18
	do	do	1868 and 1870	8.84
	do	do	1870 and 1872	36.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14332	C. B. Doolittle, Doraville, N. Y	Compensation of postmasters readjusted, etc.	1872 and 1874	$75.56
14333	W. E. Holmes, Downsville, N. Y	do	1870 and 1872	57.76
14334	Arnold Swift, Dresserville, N. Y	do	1866 and 1868	9.80
	do	do	1868	3.89
14335	J. L. Vernovy, Dwaar's Kill, N. Y	do	1870 and 1872	7.54
	do	do	1866 and 1868	18.28
14336	Eli Barton, Eagle Bridge, N. Y	do	1868 and 1869	24.01
14337	Z. A. Dyer, East Berne, N. Y	do	1868	1.51
	do	do	1868 and 1869	8.15
14338	Geo. M. Day, East Carlton, N. Y	do	1872 and 1874	8.70
14339	Jno. Conlee, East Clarkson, N. Y	do	1866 and 1868	95.28
	do	do	1870 and 1871	16.80
	do	do	1868 and 1870	19.46
14340	James M. Smith, East De Kalb, N. Y	do	1866 and 1868	40.58
14341	Edgar M. Farrington, East Durham, N. Y.	do	do	58.45
14342	Garrett Dyer, East Florence, N. Y	do	do	26.54
14343	J. H. Bidwell, East Galway, N. Y	do	do	9.88
	do	do	1868 and 1869	2.96
14344	Jno. G. Savage, East Galway, N. Y	do	1869 and 1870	1.78
	do	do	1870 and 1872	14.86
	do	do	1872 and 1874	19.76
14345	Charles T. Richards, East Gaines, N. Y.	do	1866 and 1867	8.92
14346	Samuel D. Carr, East German, N. Y	do	1866 and 1868	29.22
	do	do	1868 and 1870	16.66
14347	Jno. S. Miller, East Greenbush, N. Y	do	1866 and 1868	8.92
14348	Justin E. Beebe, East Greenwich, N. Y.	do	1868 and 1870	23.46
	do	do	1870 and 1871	8.75
14349	Wm. H. Martin, East Greenwich, N. Y.	do	1871 and 1872	16.09
14350	S. Elwell, East Guilford, N. Y	do	1866 and 1868	25.06
	do	do	1868 and 1869	5.56
14351	Joseph F. Beal, East Guilford, N. Y	do	1873 and 1874	6.64
14352	Levi Potter, East Hamburgh, N. Y	do	1866	18.32
14353	Huron Foot, East Hamilton, N. Y	do	1868	5.29
14354	Henry S. Distin, East Jewett, N. Y	do	1866	.54
14355	W. H. Mead, East Jewett, N. Y	do	1866 and 1867	7.74
14356	Loren E. Woodworth, East Jewett, N. Y.	do	1867 and 1868	4.96
	do	do	1868 and 1870	5.56
	do	do	1870 and 1872	10.00
	do	do	1872 and 1874	18.84
14357	Andrew Clark, East Kendall, N. Y	do	do	17.20
14358	W. A. Buck, East Lansing, N. Y	do	1866 and 1868	15.16
14359	Carman Thompson, East Line, N. Y	do	1868 and 1870	19.44
	do	do	1870 and 1872	18.66
14360	Benj. Priest, East Orange, N. Y	do	1868 and 1870	4.50
	do	do	1872 and 1874	13.18
14361	Wm. H. Richardson, East Palermo, N. Y.	do	1868	3.31
	do	do	1868 and 1869	4.19
14362	Sam'l R. Smith, East Palermo, N. Y	do	1869 and 1870	2.23
	do	do	1870 and 1872	31.58
	do	do	1872 and 1874	17.98
14363	Geo. W. Wright, East Pembroke, N. Y	do	1866 and 1868	87.52
14364	Riley W. Case, East Penfield, N. Y	do	1872 and 1874	31.08
14365	Z. Baker, East Pike, N. Y	do	1866 and 1868	20.12
	do	do	1872 and 1873	11.26
14366	Simeon Wells, East Pitcairn, N. Y	do	1866 and 1870	8.70
	do	do	1870 and 1872	3.44
	do	do	1872 and 1874	5.06
14367	H. T. Herrington, East Poestenkill, N. Y	do	1866 and 1867	31.13
14368	Darius Amidon, East Poestenkill, N. Y	do	1867 and 1868	18.69
14369	Horace Hall, jr., East Randolph, N. Y	do	1866 and 1868	295.48
14370	Herman H. Taylor, East Rodman, N. Y.	do	do	15.04
	do	do	1868 and 1870	19.12
	do	do	1870 and 1872	19.76
14371	James K. Hitchcock, East Rushford, N. Y.	do	1868 and 1870	18.70
	do	do	1870 and 1872	8.50
14372	Warren Norton, East Salem, N. Y	do	1866 and 1868	8.74
14373	James C. Brown, East Schodack, N. Y	do	1866	2.75
14374	Harris B. Howard, East Schodack, N. Y	do	1866 and 1868	19.26
14375	Newton Hough, East Schuyler, N. Y	do	1866	5.72
14376	S. C. Churchill, East Scott, N. Y	do	1866 and 1868	5.82
	do	do	1868 and 1870	9.68
	do	do	1870 and 1872	16.00
	do	do	1872 and 1874	2.88
14377	W. T. Smith, East Setanket, N. Y	do	1870 and 1872	34.06
14378	Wm. Jaques, East Shelby, N. Y	do	1866 and 1868	34.38
14379	Geo. R. Fowler, East Springfield, N. Y	do	do	122.20

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14379	Geo. R. Fowler, East Springfield, N. Y.	Compensation of postmasters readjusted, etc.	1868 and 1870	$40.54
	do	do	1870 and 1872	29.08
	do	do	1872 and 1874	40.88
14380	R. P. Roberts, East Varick, N. Y	do	1866 and 1868	11.76
	do	do	1870 and 1872	15.92
	do	do	1872 and 1874	11.70
14381	G. W. Young, East Venice, N. Y	do	1866 and 1868	24.30
14382	Ira Sherman, East Windham, N. Y	do	do	8.44
	do	do	1868 and 1870	6.14
	do	do	1870 and 1872	9.94
	do	do	1872 and 1873	8.19
14383	Eri Castle, East Woodhull, N. Y	do	1868 and 1870	83.26
	do	do	1870 and 1872	9.52
14384	Nelson Thurber, East Worcester, N. Y	do	1866 and 1868	41.24
	do	do	1868 and 1870	153.28
	do	do	1870 and 1872	112.60
	do	do	1872 and 1874	110.54
14385	A. D. Ward, Eatonville, N. Y	do	1866 and 1868	13.94
	do	do	1868 and 1870	9.02
14386	Fred'k Wendling, Ebenezer, N. Y	do	do	30.66
14387	Lyman Pratt, Eden, N. Y	do	1866 and 1868	73.38
	do	do	1868 and 1870	20.12
14388	Legrand Mead, Edenville, N. Y	do	1866 and 1868	6.37
14389	Truman Bootman, Edmeston, N. Y	do	do	53.90
	do	do	1870 and 1872	28.78
	do	do	1872 and 1873	42.16
14390	Harry B. Case, Eden Valley, N. Y	do	1866 and 1868	23.56
14391	Henry W. McBryer, Edwards, N. Y	do	do	131.70
14392	L. Troombly, Edwardsville, N. Y	do	1866 and 1867	8.65
14393	Michael Snyder, Eggertsville, N. Y	do	1866	1.74
14394	Wm. C. Raymond, Elba, N. Y	do	1866 and 1868	74.28
	do	do	1868 and 1870	42.30
	do	do	1870 and 1872	46.10
14395	W. P. Van Vechter, Elbridge, N. Y	do	1866 and 1868	69.40
	do	do	1868 and 1870	108.90
	do	do	1870 and 1872	99.38
14396	Wm. Cressey, Ellenburgh Centre, N. Y	do	1866	21.42
14397	Oscar Hale, Ellery, N. Y	do	1868 and 1870	24.52
	do	do	1870 and 1871	16.04
14398	Stephen Culver, Ellery, N. Y	do	1871 and 1872	9.01
14399	Chas. A. Clapp, Ellington, N. Y	do	1866 and 1868	181.14
	do	do	1868 and 1869	28.71
14400	Frank E. Metcalf, Ellisburgh, N. Y	do	1866 and 1868	70.08
	do	do	1868 and 1870	97.90
14401	Morris McDonald, Ellsworth, N. Y	do	1866 and 1870	33.64
14402	D. W. Emmons, Emmonsburgh, N. Y	do	1866 and 1868	20.62
14403	Rufus Tallmadge, Enfield, N. Y	do	1866 and 1867	4.02
14404	Lewis H. Van Kirk, Enfield, N. Y	do	1870 and 1872	5.38
14405	John P. Bross, Enfield Centre, N. Y	do	1866 and 1868	41.08
	do	do	1868 and 1870	20.24
	do	do	1870 and 1872	36.30
	do	do	1872	3.25
14406	J. E. Van Voast, Ephratah, N. Y	do	1872 and 1874	23.20
14407	James Hollenbeck, Erin, N. Y	do	1866 and 1868	9.14
14408	M. V. Wheeler, Esopus, N. Y	do	1868 and 1870	63.52
14409	Michael H. Stower, Essex, N. Y	do	1866	16.00
14410	David T. Packard, Essex, N. Y	do	1866 and 1867	43.14
14411	Chas. G. Fancher, Essex, N. Y	do	1867 and 1868	67.16
14412	Geo. H. Hantz, Etna, N. Y	do	1872 and 1874	69.90
14413	Ordom Earl. Evans, N. Y	do	1868 and 1869	22.44
14414	Thos. I. Brownell, Evans, N. Y	do	1869 and 1870	16.83
	do	do	1870 and 1872	31.52
14415	W. S. Cooper, Evans' Mills, N. Y	do	1866 and 1868	43.57
14416	Orel Pope, Fabius, N. Y	do	do	21.42
	do	do	1872 and 1873	19.86
14417	S. H. Corbin, Fabius, N. Y	do	1866 and 1867	28.10
14418	T. P. Yates, Factoryville, N. Y	do	1866 and 1868	130.20
14419	E. L. Ormsby, Fair Dale, N. Y	do	do	21.46
14420	Oscar F. Miller, Fair Haven, N. Y	do	1869 and 1870	7.18
14421	Henry Jerome, Fair Mount, N. Y	do	1870 and 1872	11.80
	do	do	1868 and 1870	14.20
	do	do	1866 and 1868	27.24
14422	Richard R. Norton, Farmer's Mills, N. Y	do	do	15.74
14423	John R. Wheeler, Farmer Village, N. Y	do	do	168.15
14424	C. S. Powell, Farmingdale, N. Y	do	do	63.17
14425	Smith H. Crocker, Farmington, N. Y	do	do	47.40
14426	Wm. H. Bradt, Fine, N. Y	do	do	13.28
	do	do	1868 and 1870	6.85
14427	D. S. S. Sammis, Fire Island, N. Y	do	1866 and 1868	56.47

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14427	D. S. S. Sammis, Fire Island, N. Y.	Compensation of postmasters readjusted, etc.	1868 and 1870	$45.38
	do	do	1870 and 1872	64.94
14428	Phebe J. Case, Flatbush, N. Y.	do	1868 and 1870	132.13
	do	do	1866 and 1868	91.80
14429	Isaac Folansbee, Flatbush, N. Y.	do	1872 and 1874	7.66
	Isaac Folansbee, Flat Creek, N. Y.	do	1870 and 1872	6.44
14430	J. B. Hendrickson, Flatlands, N. Y.	do	do	32.96
	do	do	1872 and 1874	44.20
	do	do	1868 and 1870	52.46
14431	Chas. E. Truman, Flemingville, N. Y.	do	1871 and 1872	6.31
14432	A. V. Van Gelder, Flint Creek, N. Y.	do	1868 and 1870	12.74
	do	do	1872 and 1874	9.52
14433	Geo. H. Evans, Florence, N. Y.	do	1866 and 1868	44.12
14434	Asa S. Clark, Floyd, N. Y.	do	do	149.34
14435	Geo. H. Quartermain, Flushing, N. Y.	do	do	364.50
14436	Silas W. Alger, Fly Creek, N. Y.	do	do	113.70
	do	do	1872 and 1874	71.16
	do	do	1870 and 1872	36.96
14437	Joseph Jacklinski, Fly Mountain, N. Y.	do	1866 and 1868	51.52
14438	Adella Fretcher, Fonda, N. Y.	do	do	167.08
14439	James Schutt, Forest, N. Y.	do	1870 and 1872	40.32
14440	Edward Hartwell, Forestburgh, N. Y.	do	1866 and 1868	62.98
	do	do	1868 and 1870	36.70
	do	do	1872 and 1874	10.90
14441	Samuel Corning, Fort Ann, N. Y.	do	1866 and 1868	359.10
	do	do	1868 and 1870	222.36
	do	do	1870 and 1872	248.80
	do	do	1872 and 1874	456.06
14442	Jno. Brooks, Fort Montgomery, N. Y.	do	1870 and 1872	57.88
14443	Myron Doty, Fosterville, N. Y.	do	1866 and 1868	9.18
14444	G. W. Kelley, Fowler, N. Y.	do	1870 and 1872	18.26
14445	A. V. Joslin, Frankfort, N. Y.	do	1866 and 1868	415.28
14446	Elisha Wetmore, Frankfort Hill, N. Y.	do	do	21.72
	do	do	1870 and 1872	26.60
	do	do	1872 and 1874	17.19
14447	Geo. Tremble, Franklin Falls, N. Y.	do	1870 and 1872	23.06
	do	do	1866 and 1867	8.53
14448	Augustus Goodspeed, Franklin Falls, N. Y.	do	1867 and 1868	14.22
14449	Henry S. Armstrong, Franklin Iron Works, N. Y.	do	1870 and 1872	73.00
	do	do	1872 and 1873	116.61
14450	Calvin Russell, Franklinton, N. Y.	do	1866 and 1868	44.40
	do	do	1868	9.23
14451	Jacob Baker, Freedom Plains, N. Y.	do	1866	12.46
14452	Martin A. Smith, Fremont Centre, N. Y.	do	1870 and 1872	46.98
	do	do	1872 and 1874	56.58
14453	O. S. Caldwell, Freeville, N. Y.	do	1866 and 1867	8.97
14454	John E. Cady, Freeville, N. Y.	do	1871 and 1872	4.07
14455	Joel B. George, Freeville, N. Y.	do	do	5.04
14456	E. R. Gifford, French Creek, N. Y.	do	1868	1.55
14457	Jessie Dunn, French Mountain, N. Y.	do	1872 and 1873	6.48
	do	do	1870 and 1872	28.78
14458	Esek McCoy, Frontier, N. Y.	do	1866 and 1867	28.02
14459	Chas. G. Edgerton, Fullerville Iron Works, N. Y.	do	1866 and 1868	26.96
14460	Carlton C. Griswold, Gaines, N. Y.	do	1868	4.86
14461	H. A. Van Valkenburgh, Gallatinville, N. Y.	do	1872 and 1874	9.72
14462	Richard Ruland, Gallupville, N. Y.	do	1866 and 1868	51.24
14463	Geo. P. Trier, Gardenville, N. Y.	do	1872 and 1874	71.92
14464	Nelson G. Rowley, Gardnersville, N. Y.	do	1868 and 1869	25.88
14465	Isaac M. Everest, Garoga, N. Y.	do	1866 and 1868	35.30
	do	do	1868 and 1870	13.96
14466	Geo. F. Garrison, Garrison's, N. Y.	do	1866 and 1868	218.84
14467	J. M. Streeter, Gasport, N. Y.	do	1866 and 1867	87.13
14468	Thos. M. Joslin, Gates, N. Y.	do	1870	1.27
	do	do	1872 and 1874	39.50
14469	Daniel Feeney, Gayhead, N. Y.	do	1870	.98
	do	do	1870 and 1872	10.40
14470	Wm. A. Hare, Georgetown, N. Y.	do	1868 and 1869	13.06
14471	Elijah A. Jackson, Georgetown, N. Y.	do	1870	4.36
	do	do	1870 and 1871	32.36
14172	Jeremiah C. Lamphier, Getzville, N. Y.	do	1870 and 1872	9.98
	do	do	1868 and 1870	9.14
	do	do	1866 and 1868	17.72
14473	E. B. Underhill, Ghent, N. Y.	do	1867 and 1868	91.59
	do	do	1868 and 1870	27.94
14474	M. F. Cooper, Gibson, N. Y.	do	1866 and 1868	59.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14474	M. F. Cooper, Gibson, N. Y	Compensation of postmasters readjusted, etc.	1872 and 1874	$69.29
	do	do	1870 and 1872	140.38
	do	do	1868 and 1870	69.24
14475	C. S. Kingsley, Gilboa, N. Y	do	1868	2.98
14476	David Zelie, Gilboa, N. Y	do	1868 and 1869	20.87
14477	Alonzo Stryker, Gilboa, N. Y	do	1869	23.86
14478	C. S. Kingsley, Gilboa, N. Y	do	1868	8.36
14479	John Reed, Gilboa, N. Y	do	1866 and 1868	41.58
14480	Wm. Goldsmith, Glasco, N. Y	do	1870	25.93
	do	do	1868 and 1870	32.66
14481	Wm. H. Riley, Glen Aubrey, N. Y	do	1870 and 1872	12.20
	do	do	1872 and 1874	15.56
14482	Ira Williams, Glenco Mills, N. Y	do	1870 and 1872	9.58
	do	do	1868 and 1870	3.40
	do	do	1866 and 1868	15.78
	do	do	1872 and 1874	15.78
14483	Leonard F. Coles, Glen Cove, N. Y	do	1870 and 1872	184.14
	do	do	1869 and 1870	120.30
14484	Henry A. Craig, Glenwood, N. Y	do	1866 and 1867	23.71
14485	Esther L. Burton, Gloverville, N. Y	do	1866 and 1868	909.22
14486	Henry H. Burton, Goff's Mills, N. Y	do	do	16.90
14487	Chas. W. Avery, Golden's Bridge, N. Y	do	1866 and 1867	17.31
14488	Allen P. Squires, Good Ground, N. Y	do	1866 and 1868	15.86
14489	James Rice, Granby Centre, N. Y	do	do	20.74
14490	G. J. Johnson, Grant, N. Y	do	1870 and 1872	10.06
14491	Chas. Hunt, Grant's Mills, N. Y	do	do	9.54
	do	do	1866 and 1868	10.78
	do	do	1868 and 1870	3.66
14492	Jno. Bergen, Gravesend, N. Y	do	1868 and 1869	8.94
14493	Henry Bills, Gravesville, N. Y	do	1866 and 1868	27.96
14494	James M. Brown, Gray, N. Y	do	1867 and 1868	31.80
	do	do	1870 and 1872	41.42
	do	do	1872 and 1874	55.38
14495	Andrew L. Norton, Great Valley, N. Y	do	1866 and 1867	24.77
14496	Clarkson Northup, Greenfield, N. Y	do	1866 and 1868	33.72
	do	do	1868 and 1870	20.54
	do	do	1870 and 1872	13.28
14497	Charles McCartee, Green Point, N. Y	do	1866	60.38
14498	Russell Freeman, Green River, N. Y	do	1870 and 1872	8.52
	do	do	1872 and 1873	2.75
	do	do	1868 and 1870	24.60
	do	do	1866 and 1868	33.74
14499	John Lonees, Greig, N. Y	do	1870 and 1872	65.43
14500	Francis Rice, Greigsville, N. Y	do	1866 and 1868	18.58
	do	do	1872 and 1874	17.54
14501	Alfred Cooper, Greenwood Works, N. Y	do	1866 and 1868	55.22
14502	Staat V. S. Fonda, Groom's Corners, N. Y	do	1871 and 1872	48.69
14503	Erastus R. Foote, Groom's Corners, N. Y	do	1870	16.23
	do	do	1866 and 1868	62.08
14504	Wm. Pease, Groveland, N. Y	do	1868 and 1869	5.58
	do	do	1866 and 1868	10.44
14505	Nelson Everett, Groveland, N. Y	do	1866	.96
14506	Geo. H. Baldwin, Guilford Centre, N. Y	do	1870 and 1872	67.36
	do	do	1868	1.49
14507	S. D. Rich, Hailsborough, N. Y	do	1868 and 1870	18.74
14508	Geo. D. Morrison, Hailsborough, N. Y	do	1870	4.80
14509	James Miller, Halcott Centre, N. Y	do	1870 and 1873	1.54
	do	do	1870 and 1872	3.46
14510	Josiah Kelley, Halcottsville, N. Y	do	1866 and 1867	4.56
14511	Jno. V. Kelley, Halcottsville, N. Y	do	1867 and 1868	4.88
14512	A. D. Bird, Hale's Eddy, N. Y	do	1868 and 1870	21.08
	do	do	1866 and 1868	67.88
14513	C. E. Taylor, Halsey Valley, N. Y	do	1868	3.18
	do	do	1870 and 1872	8.84
14514	Edwin Leworthy, Hamlet, N. Y	do	do	20.56
14515	Alfred S. Braneau, Hamlin, N. Y	do	1872 and 1874	21.06
	do	do	1866 and 1868	24.88
14516	Orange G. Waldo, Hammond, N. Y	do	1866	4.89
14517	Sam'l W. Nelson, Harford, N. Y	do	1866 and 1868	21.50
	do	do	1870 and 1871	18.58
14518	Peter Humphrey, Harlemville, N. Y	do	1868	6.69
14519	D. W. Pearsall, Harpersville, N. Y	do	1866 and 1868	65.64
14520	Frank B. Ward, Harrisville, N. Y	do	1868 and 1869	16.50
14521	David S. Williams, Harrisville, N. Y	do	1870	41.25
14522	Johnson Parkhurst, Hartfield, N. Y	do	1866 and 1867	12.32
14523	C. A. Lewis, Hartland, N. Y	do	1868	6.58
	do	do	1868 and 1870	61.56
14524	Frederick Wilcox, Hartwick, N. Y	do	1866 and 1868	49.92

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14525	Wm. C. Davison, Hartwick Seminary, N. Y.	Compensation of postmasters readjusted, etc.	1870 and 1872	$28.33
14526	A. N. Bert, Hastings, N. Y	do	1866 and 1868	63.58
14527	J. N. Holmes, jr., Hastings Centre, N. Y	do	1866 and 1867	8.16
14528	Marcus Dunn, Hastings Centre, N. Y	do	1872 and 1873	7.54
14529	Moses R. Smith, Hauppauge, N. Y	do	1866 and 1868	23.74
	do	do	1868 and 1869	18.06
14530	T. H. Gage, Hawleyton, N. Y	do	1866 and 1868	12.60
14531	Dan'l G. Hunter, Hector, N. Y	do	1872 and 1873	22.66
	do	do	1868 and 1870	33.30
	do	do	1870 and 1872	37.90
14532	Loren B. Simmons, Henderson, N. Y	do	1866	11.97
14533	Fletcher Rogers, Hensonville, N. Y	do	1868 and 1870	14.32
	do	do	1870	9.33
14534	Romaine L. Parsons, Hensonville, N. Y.	do	1871 and 1872	23.34
14535	David Davis, Hensonville, N. Y	do	1866	6.69
14536	Fletcher Rogers, Hensonville, N. Y	do	1867 and 1868	20.08
14537	D. T. Slater, Hensonville, N. Y	do	1873 and 1874	22.95
14538	Harry Turner, Hermon, N. Y	do	1866 and 1868	134.46
14539	James L. Blodgett, Hermitage, N. Y	do	do	26.64
	do	do	1868 and 1870	57.86
	do	do	1870 and 1872	76.74
	do	do	1872 and 1874	106.08
14540	Hunt Farnsworth, Hickory Corners, N. Y.	do	1866 and 1868	20.48
14541	Israel H. Snyder, High Falls, N. Y	do	1868	8.37
	do	do	1868 and 1870	25.26
14542	F. O. Norton, High Falls, N. Y	do	1866 and 1868	58.62
14543	Chas. H. Townsend, Highland Mill, N. Y.	do	1872 and 1874	69.44
14544	J. J. Wheaton, Hillowog, N. Y	do	1868 and 1870	21.56
14545	Walter L. Yager, Hindsburgh, N. Y	do	1871 and 1872	38.43
14546	Russell Williams, Hindsburgh, N. Y	do	1868 and 1870	108.88
14547	Henry P. Ellis, Hinmansville, N. Y	do	do	46.18
	do	do	1866 and 1868	76.74
14548	M. I. Lester, Hoag's Corner, N. Y	do	1868 and 1870	19.38
14549	Alonzo French, Hoffman's Ferry, N. Y.	do	1866 and 1868	103.06
14550	Chas. R. Coates, Holbrook, N. Y	do	1868 and 1870	16.12
	do	do	1872 and 1873	133.38
14551	Watson Wilson, Holbrook, N. Y	do	1866 and 1868	32.01
14552	A. M. Orr, Holland, N. Y	do	1873 and 1874	65.34
14553	J. P. Armstrong, Hoosick, N. Y	do	1866 and 1868	100.00
14554	Chas. S. Smith, Hope Falls, N. Y	do	1870 and 1872	4.40
	do	do	1866 and 1868	22.46
	do	do	1872 and 1874	25.86
14555	K. S. Chittenden, Hopkinton, N. Y	do	1866 and 1868	68.74
14556	D. L. Wellman, Hornby, N. Y	do	1868 and 1870	18.20
14557	G. I. Murphy, Hornby, N. Y	do	1872 and 1874	18.98
14558	Geo. House, Houseville, N. Y	do	1866 and 1867	16.36
14559	Rob't House, Houseville, N. Y	do	1868	6.76
14560	Albert T. Parkhill, Howard, N. Y	do	1866 and 1868	116.80
	do	do	1868 and 1870	29.98
	do	do	1870 and 1872	33.24
14561	W. D. Zimmer, Howe's Cave, N. Y	do	do	86.92
14562	Helen C. Robinson, Howlett Hill, N. Y.	do	1868 and 1869	25.75
14563	M. W. Skiff, Hume, N. Y	do	1866	10.39
14564	H. J. Upson, Hume, N. Y	do	1871 and 1872	7.67
14565	J. D. Hunt, Hunt's Hollow, N. Y	do	1868	10.98
14566	P. P. Hilton, Hyndsville, N. Y	do	1866 and 1868	38.85
	do	do	1868 and 1870	6.11
	do	do	1872 and 1874	21.98
14567	Jno. Vaughan, Ingraham, N. Y	do	1866 and 1868	21.04
	do	do	1870 and 1871	7.38
14568	F. J. Lengfield, Ingraham, N. Y	do	1872 and 1872	2.48
	do	do	1872 and 1874	6.42
14569	Mortimer L. Blood, Italy Hill, N. Y	do	do	14.80
	do	do	1872	1.82
14570	Lewis M. Smith, Jackson Corners, N. Y.	do	1866 and 1868	10.08
	do	do	1872 and 1874	8.12
14571	Eli Tator, Jack's Reef, N. Y	do	1868 and 1870	15.84
14572	Franklin Corwine, Jamesport, N. Y	do	1869 and 1870	23.13
	do	do	1870 and 1872	239.82
	do	do	1872 and 1874	186.70
14573	Lucius Peck, Java, N. Y	do	1866 and 1868	29.56
14574	Lucius Thompson, Java, N. Y	do	1870 and 1872	20.16
	do	do	1872 and 1874	11.38
14575	Sylvester Griggs, Java Village, N. Y	do	1866 and 1868	22.70
	do	do	1872 and 1873	5.55
14576	Geo. G. Toby, Jay, N. Y	do	1866 and 1868	107.34
	do	do	1870 and 1872	20.14
	do	do	1872 and 1874	47.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14577	Wm. H. Armstrong, Jenksville, N. Y...	Compensation of postmasters readjusted, etc.	1866	$2.21
14578	George Tappen, Jericho, N. Y	do	1870	4.77
	do	do	1870 and 1872	70.30
	do	do	1872 and 1874	25.42
14579	Wm. C. Johnson, Johnson's, N. Y	do	do	23.26
14580	George W. Banker, Johnsonville, N. Y..	do	1866 and 1868	71.50
14581	Jacob L. Van Woert, Johnsonville, N. Y.	do	1866	10.21
14582	T. Dimmick, Jonesville, N. Y	do	1867 and 1868	42.91
14583	Porter J. Schermerhorn, Jonesville, N. Y.	do	1866 and 1867	37.21
14584	Alvin Kingsley, Joy, N. Y	do	1866 and 1868	30.50
	do	do	1868 and 1869	6.50
14585	Daniel H. Viall, Junction, N. Y..	do	1866 and 1868	14.94
	do	do	1872 and 1874	8.34
14586	John Carman, Junius, N. Y	do	1866 and 1868	39.24
14587	Seymour Huston, Kanona, N. Y	do	1873 and 1874	35.60
14588	Ellen Smith, Kasoag, N.Y	do	1870 and 1872	30.72
14589	Wesley Fox, Keeney's Settlement, N. Y.	do	1868 and 1870	10.44
14590	Peter Keeper, Keefer's Corners	do	1866 and 1868	5.40
	do	do	1868 and 1870	1.64
	do	do	1870 and 1872	5.00
	do	do	1872 and 1874	2.48
14591	Bartlett Cooley, Kendaia, N. Y	do	1866 and 1867	18.22
14592	Gilman Barnett, Kendall, N. Y	do	do	14.43
14593	Martin Webster, Kendall Mills, N. Y...	do	1866 and 1868	52.40
	do	do	1868 and 1869	5.01
14594	Evander Odell, Kensico, N. Y	do	1866 and 1867	20.97
14595	John B. Wyckoff, Kensico, N. Y	do	1867 and 1868	19.65
	do	do	1872 and 1874	17.34
14596	Robert Pettit, Kenyonville, N. Y	do	1868 and 1870	9.34
	do	do	1870 and 1872	13.42
	do	do	1872 and 1874	17.86
14597	Lewis Perkins, Ketchum's Corners, N.Y	do	1870 and 1872	12.88
	do	do	1872 and 1874	11.64
14598	Wm. Wood, Ketchumville, N. Y	do	1867 and 1868	33.01
14599	Levi W. Sherman, Klantone, N. Y	do	1872 and 1874	21.96
14600	H. C. Tracy, Kidder's Ferry, N. Y	do	1870 and 1872	31.08
14601	Geo. Reynolds, Kinderhook, N. Y	do	1872	29.10
14602	James F. Acker, Kingsbury, N. Y	do	1870 and 1872	19.40
	do	do	1872 and 1874	29.18
14603	A. C. Purdy, King's Ferry, N. Y	do	1866	18.89
14604	David Pixley, Kirkland, N. Y	do	1868 and 1870	147.56
14605	Benj. Crounse, Knowersville, N. Y	do	1869 and 1870	9.57
	do	do	1870 and 1872	56.34
14606	J. F. Sawyer, Knowersville, N. Y	do	1866 and 1868	72.34
14607	Izrahiah W. Chesebro, Knox, N, Y	do	1869 and 1870	4.38
14608	Julius A. Kuck, Kuckville, N. Y	do	1868 and 1869	8.09
	do	do	1868	3.81
14609	M. D. W. Harbrouch, Lackawack, N. Y.	do	1866 and 1868	18.50
	do	do	1868 and 1870	17.09
14610	Timothy D. Flansburg, La Fargeville, N. Y.	do	1872 and 1874	99.50
14611	Philitus R. Carroll, La Fayetteville, N. Y.	do	1870 and 1871	8.19
14612	Stephen Luther, Lairdsville, N. Y	do	1872	2.46
	do	do	1868 and 1870	10.76
	do	do	1870 and 1872	7.44
[illegible]	Albert W. Green, Lakeport, N. Y	do	1866 and 1867	35.20
14614	F. A. Perry, Lake Ridge, N. Y	do	1872	.56
14615	do	do	1870 and 1872	18.04
14616	Lanton Pettit, Lake Road, N. Y	do		4.62
	do	do		11.68
14617	Alex. Sands, Lake Side, N. Y	do		29.76
	do	do		75.24
14618	David Gray, Lakeville, N. Y	do		56.84
	do	do		5.69
14619	Lovett P. West, Lakeville, N. Y	do		17.10
14620	Thos. A. Cary, Lamb's Corners, N. Y	do		28.96
14621	John Leininger, Lancaster, N. Y	do		184.25
14622	Darius Hall, Lansingville, N. Y	do		15.80
14623	Chas. H. Dates, Lansingville, N. Y	do		41.10
14624	David S. Ramsdell, Laona, N. Y	do		26.16
14625	Wm. Hutchinson, Lassellsville, N.Y	do		28.60
14626	Milton Gurney, Laurens, N. Y	do		82.82
14627	Alonzo Wakeman, Lawyersville, N. Y..	do		21.62
	do	do		18.80
14628	John B. Gilbert, Lebanon, N. Y	do		14.52
	do	do		39.86
14629	Chas. W. Brasee, Lebanon, N. Y	do		80.14

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14630	Chas. D. Avery, Ledyard, N. Y	Compensation of postmasters readjusted, etc.		$38.88
14631	S. D. Smith, Leeds, N. Y	do		58.68
14632	Myron B. Benton, Leedsville, N. Y	do		9.32
	do	do		8.98
	do	do		11.28
14633	Chas. D. Baker, Leesville, N. Y	do		3.60
	do	do		5.52
14634	Wm. O. Tyrer, Leon, N. Y	do		52.81
14635	H. S. Brown, Lewisborough, N. Y	do		7.23
14636	Jas. M. Van Valkenburgh, Lexington, N. Y.	do		22.50
14637	Andrew Dubois, Libertyville, N. Y	do		11.42
14638	Jno. W. Edwards, Limerick, N. Y	do	1866 and 1868	47.80
14639	Horace Poole, Lincklaen, N. Y	do	do	16.24
	do	do	1870 and 1872	13.32
14640	Wm. Moore, Lindleytown, N. Y	do	1866 and 1868	83.46
14641	Robert Atkins, Lisbon Centre, N. Y	do	do	30.52
14642	A. D. Holbrook, Lithgow, N. Y	do	1870 and 1872	19.50
	do	do	1872 and 1874	18.58
14643	David S. Tallman, Little Rest, N. Y	do	1868 and 1870	7.66
14644	Loran Dunham, Little Utica, N. Y	do	1866 and 1868	49.30
14645	Jasper T. Crawford, Liverpool, N. Y	do	do	109.00
14646	German Fingar, Livingston, N. Y	do	1866 and 1867	8.66
14647	H. J. Morey, Livonia, N. Y	do	1872	7.34
	do	do	1870 and 1872	46.56
14648	Jonathan W. Low, Lock Sheldrake, N. Y	do	1866 and 1868	35.10
	do	do	1870 and 1872	13.17
14649	Sam'l W. Thurston, Locust Valley, N. Y	do	1869 and 1870	20.98
	do	do	1866 and 1868	82.25
14650	Jesse H. Ward, Lotville, N. Y	do	1866 and 1867	1.96
14651	Samuel Cramer, Lotville, N. Y	do	1867 and 1869	1.96
	do	do	1870	9.36
	do	do	1872 and 1874	12.38
14652	La Fayette Baker, Louisville, N. Y	do	1870 and 1872	22.29
	do	do	1872 and 1874	30.34
14653	Wm. Mead, Ludlowville, N. Y	do	1866 and 1868	49.94
14654	Bolivar Burr, Lumberville, N. Y	do	do	19.10
	do	do	1868 and 1870	5.92
14655	Jas. O. Stokes, jr., Lyndonville, N. Y	do	1866 and 1868	88.54
	do	do	1870 and 1872	64.98
	do	do	1872 and 1874	82.98
14656	Joel W. Alger, Lyonsdale, N. Y	do	1868 and 1870	15.80
14657	Roderick Royce, McClelland, N. Y	do	1866 and 1868	6.44
14658	Wm. D. Wood, McConnellsville, N. Y	do	do	38.24
	do	do	1868 and 1869	34.45
14659	Jacob P. Hill, McDonough, N. Y	do	1866 and 1867	20.28
14660	Richard T. Cornell, Mabbettsville, N. Y	do	1866 and 1868	17.89
14661	Elias Hicks, Macedon Centre, N. Y	do	1872 and 1873	52.54
	do	do	1870 and 1872	55.18
14662	Julette Wellington, Machias, N. Y	do	1866 and 1868	108.46
14663	Chas. C. Champlin, Madalin, N. Y	do	do	85.40
	do	do	1872 and 1874	37.98
14664	Edwin R. Barker, Madison, N. Y	do	1866	8.95
14665	James Brown, Madison, N. Y	do	1866 and 1868	134.15
	do	do	1868 and 1870	94.38
14666	Ira L. C. Lockwood, Madrid, N. Y	do	1872	19.35
	do	do	1870 and 1872	124.70
	do	do	1870	3.88
14667	Jesse Cogswell, Madrid, N. Y	do	1866 and 1868	192.54
	do	do	1868 and 1869	37.80
14668	Francis H. Marean, Maine, N. Y	do	1866 and 1868	143.62
14669	John Maxwell, Malden, N. Y	do	1870 and 1872	37.02
14670	Wm. C. Herrick, Malden Bridge, N. Y	do	1868 and 1870	40.42
14671	Robt. Hoes, Malden Bridge, N. Y	do	1870 and 1872	15.23
14672	Bishop Hoyt, Mallory, N. Y	do	1866 and 1868	48.92
14673	Abram J. Van Arnein, Malta, N. Y	do	1871 and 1872	6.61
	do	do	1872 and 1874	13.02
14674	John W. Rogers, Malta, N. Y	do	1870 and 1871	3.96
	do	do	1868 and 1870	20.98
14675	Harvey Foltz, Mandana, N. Y	do	1866 and 1868	12.50
	do	do	1868 and 1870	10.40
14676	Geo. K. Dodge, Manhasset, N. Y	do	1869 and 1870	30.63
14677	Wm. M. Wardwell, Mannsville, N. Y	do	1872 and 1874	105.76
14678	Orson Phelps, Manor Kill, N. Y	do	1866 and 1868	16.30
	do	do	1872	1.62
14679	E. C. Carley, Marathon, N. Y	do	1866	35.80
14680	Thos. De Condres, Marcellus, N. Y	do	1868 and 1870	92.92
14681	H. Hansett, Mariaville, N. Y	do	1866 and 1868	30.36
	do	do	1872 and 1874	15.76

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Total.
14681	H. Hansett, Mariaville, N. Y	Compensation of postmasters readjusted, etc.	1868 and 1870	$14.00
	do	do	1870 and 1872	11.26
14682	James De Witt, Marietta, N. Y	do	1866 and 1867	5.30
14683	H. F. Foster, Marilla, N. Y	do	1866 and 1868	45.63
	do	do	1870 and 1872	42.94
	do	do	1872 and 1874	43.26
14684	C. Van Alstine, Marshville, N. Y	do	1866 and 1868	26.22
	do	do	1870 and 1872	6.58
	do	do	1872 and 1874	6.88
14685	N. D. Harroun, Marvin, N. Y	do	1866 and 1868	32.72
14686	Wm. H. Turman, Maspeth, N. Y	do	1869 and 1870	54.91
14687	Henry S. Rawson, Massena, N. Y	do	1866	36.12
14688	Ira A. Goodridge, Massena Centre, N. Y.	do	1866 and 1868	17.12
	do	do	1868 and 1870	24.52
	do	do	1870 and 1872	9.58
14689	L. C. Chamberlin, Meads Creek, N. Y	do	1866 and 1868	11.46
14690	Sarah M. McKenney, Mecklenburgh, N. Y.	do	1867 and 1868	46.66
14691	Wm. A. Thorn, Medusa, N. Y	do	1870 and 1872	22.66
	do	do	1872 and 1874	42.24
14692	D. H. Viall, Melrose, N. Y	do	do	24.34
14693	Timothy H. Holden, Mendon, N. Y	do	1866	10.27
14694	Smith Porter, Mendon, N. Y	do	1871 and 1872	86.30
	do	do	1872 and 1874	43.10
14695	Oliver P. Hull, Mendon Centre, N. Y	do	do	28.00
	do	do	1868 and 1870	43.54
14696	Peter Thomas, Merrick, N. Y	do	1871 and 1872	8.97
14697	Fayette L. Gilbert, Middlefield, N. Y	do	1866 and 1868	63.98
14698	Andrew Davidson, Middlefield Centre N. Y.	do	1868 and 1869	11.83
	do	do	1866 and 1868	15.48
14699	Samuel Craig, Middle Grove, N. Y	do	1868 and 1870	28.46
14700	Benj. T. Hutchinson, Middle Island, N. Y.	do	1870 and 1872	29.16
14701	Thos. Underwood, Middlesex, N. Y	do	1866 and 1867	77.71
14702	Ebenezer Miller, Miller's Place, N. Y	do	1866 and 1868	19.62
	do	do	1868 and 1869	14.41
14703	T. D. Burnham, Mill Grove, N. Y	do	1866 and 1868	12.38
14704	George W. Millard, Milo Centre, N. Y	do	1868	10.03
	do	do	1868 and 1870	26.80
14705	Asa F. Vandenburg, Mills Corners, N. Y	do	1866 and 1868	8.01
14706	G. W. Tourje, Mills Corners, N. Y	do	1868 and 1870	2.46
	do	do	1870 and 1872	3.92
	do	do	1872 and 1874	5.00
	do	do	1868	1.14
14707	Augustus Goodrich, Mills Mills, N. Y	do	1866 and 1868	56.56
14708	Ethan Parrott, Milton, N. Y	do	1868 and 1869	65.95
14709	Cullen Barnes, Mina, N. Y	do	1866 and 1868	49.14
14710	John Hubbard, Minaville, N. Y	do	1869 and 1870	13.94
14711	Jerome B. Miller, Minden, N. Y	do	1866 and 1867	17.56
14712	Anson B. Gibbs, Mineral Springs, N. Y	do	1872 and 1874	16.68
	do	do	1869 and 1870	26.86
14713	D. B. Sawyer, Mineral Springs, N. Y	do	1868	8.95
14714	O. P. Morse, Minerva, N. Y	do	1866 and 1868	38.94
14715	Nathan E. Hulse, Minisink, N. Y	do	do	15.04
	do	do	1868 and 1870	11.72
	do	do	1870 and 1871	9.94
14716	Hiram Post, Mongaup Valley, N. Y	do	1866 and 1868	29.56
14717	Oliver E. Lindsley, Montague, N. Y	do	do	8.00
	do	do	1870 and 1871	2.01
14718	Norman F. Chase, Montrose, N. Y	do	1872 and 1874	120.34
14719	E. A. Mead, Moravia, N. Y	do	1870 and 1872	98.66
14720	Benj. Clark, Moreland, N. Y	do	1871	3.98
14721	Robt. Fisher, Morgansville, N. Y	do	1866 and 1868	15.48
14722	Albert Kidder, Moriah, N. Y	do	do	222.76
	do	do	1868 and 1870	73.16
	do	do	1870 and 1872	57.24
14723	Lorenzo Fenton, Morley, N. Y	do	1866 and 1868	89.64
14724	Dubois B. Frisbee, Morrisania, N. Y	do	1872 and 1874	347.56
	do	do	1868	43.72
14725	James Byfield, Morrisania, N. Y	do	1866 and 1867	131.16
14726	R. G. Tucker, Motts Corners, N. Y	do	do	17.00
14727	Henry Hunsicken, Mottville, N. Y	do	1866 and 1868	129.42
14728	James Fleming, Mount Read, N. Y	do	1868 and 1870	9.54
	do	do	1870 and 1872	9.38
	do	do	1872 and 1874	28.00
14729	Chauncey Wright, Mount Vision, N. Y	do	1870 and 1872	29.88
14730	Clarence W. Dexter, Munnsville, N. Y	do	do	53.27

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14731	Herman Stevens, Napanock, N. Y	Compensation of postmasters readjusted, etc.	1866 and 1868	$135.04
14732	J. B. Merlberry, Nashville, N. Y	do	1868 and 1869	11.23
14733	S. R. Hubbard, Naunburgh, N. Y	do	1868	2.55
	do	do	1868 and 1869	12.00
14734	M. L. Gardner, Navarino, N. Y	do	1868 and 1870	12.68
	do	do	1866 and 1868	31.78
	do	do	1870 and 1872	32.40
14735	Nicholas Wakelee, Neversink, N. Y	do	1866 and 1868	30.11
14736	Chas. H. Baker, Neversink, N. Y	do	do	4.30
	do	do	1868	5.99
14737	Arthur R. Bates, New Berlin, N. Y	do	1866	19.41
14738	Jno. F. Mann, New Bremen, N. Y	do	1866 and 1868	30.10
	do	do	1868 and 1870	44.50
14739	Thos. Smith, New Brighton, N. Y	do	do	205.62
	do	do	1870 and 1872	376.46
14740	Jabes H. Gilbert, New Centreville, N. Y	do	1872 and 1874	20.60
14741	D. H. Bissell, Newcomb, N. Y	do	1866 and 1868	7.16
	do	do	do	1.34
14742	Cephas Robbins, Newfane, N. Y	do	1871 and 1872	22.34
14743	Henry Outwater, Newfane, N. Y	do	1866 and 1868	40.18
14744	Isaac Fowler, New Hurley, N. Y	do	1870 and 1872	7.94
	do	do	1867 and 1868	6.03
14745	John Constable, New Hurley, N. Y	do	1866 and 1867	8.05
14746	Fred'k W. Everest, New Lebanon Centre, N. Y.	do	1866 and 1868	92.36
14747	James S. Nelson, New Lebanon Centre, N. Y.	do	1871 and 1872	14.70
14748	Henry D. Gray, New Lebanon Centre, N. Y.	do	1870 and 1872	109.80
14749	George I. Peck, New Lisbon, N. Y	do	1866 and 1868	37.02
14750	Orville Ellmer, New London, N. Y	do	do	127.88
	do	do	1868 and 1870	80.46
	do	do	1872 and 1874	85.66
14751	N. D. Bell, New Hudson, N. Y	do	1869 and 1870	6.39
	do	do	1870 and 1872	6.76
	do	do	1872 and 1874	10.62
14752	Ansel W. Stickney, New Oregon, N. Y.	do	1866 and 1868	10.38
	do	do	1870 and 1872	7.18
14753	Bainbridge Bishop, New Russia, N. Y	do	1868 and 1869	6.66
14754	Robt. Taylor, New Salem, N. Y	do	1872 and 1874	7.10
	do	do	1866 and 1868	33.62
14755	Thos. Anderton, Newtown, N. Y	do	1868	9.21
14756	A. A. Halladay, Newtonville, N. Y	do	1866 and 1868	21.07
14757	Mark White, Nicholville, N. Y	do	do	217.24
14758	Robt. Trimfer, Niverville, N. Y	do	1869 and 1870	52.88
14759	Wm. H. Slingerland, Normanskill, N. Y.	do	1866 and 1868	20.60
14760	Robt. Humphrey, Northampton, N. Y	do	1868 and 1870	75.34
	do	do	1866 and 1868	102.40
	do	do	1872 and 1874	80.84
14761	E. H. Hoyt, North Barton, N. Y	do	1866 and 1868	8.92
	do	do	1868 and 1870	6.96
	do	do	1870 and 1872	19.40
	do	do	1872 and 1874	17.62
14762	Nathan J. Minger, North Bergen, N. Y	do	1868 and 1870	24.50
	do	do	1870 and 1872	28.32
	do	do	1872 and 1874	37.44
14763	Wm. Indelled, North Branch, N. Y	do	1866 and 1868	72.96
	do	do	1872 and 1873	11.20
	do	do	1870 and 1872	17.42
	do	do	1868 and 1870	16.96
14764	Darius L. Stone, North Broadalbin, N. Y.	do	1866 and 1868	45.14
14765	S. A. Fitch, North Brookfield, N. Y	do	1873 and 1874	39.20
14766	Robinson Edie, North Cambridge, N. Y	do	1866 and 1867	5.69
14767	Jonathan W. Jones, North Chemung, N. Y.	do	do	33.55
14768	Warren Blossom, North Clarkson, N. Y.	do	1866 and 1868	23.24
14769	Wm. Lawton, North Colesville, N. Y	do	1868 and 1870	4.92
	do	do	1872 and 1874	8.12
14770	E. W. Godfrey, North Collins, N. Y	do	do	25.44
14771	Martin C. Lyon, North Elba, N. Y	do	1868 and 1870	18.54
	do	do	1870 and 1872	10.02
14772	W. S. Sikes, North Evans, N. Y	do	1866 and 1868	57.24
	do	do	1870 and 1872	27.82
14773	Silas Brassee, North Franklin, N. Y	do	1870	2.25
14774	Flora Schermerhorn, North Gage, N. Y.	do	1870 and 1872	61.60
	do	do	1872 and 1874	29.26
14775	Sam'l R. Wiley, North Granville, N. Y	do	1870 and 1871	57.11
	do	do	1873 and 1874	56.63
14776	H. H. Hazen, North Greece, N. Y	do	1866 and 1868	117.14

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14876	Alva Brown, Poney Hollow, N. Y.	Compensation of postmasters readjusted, etc.	1866 and 1868	$25.74
14877	Levi Truesdell, Portageville, N. Y	do	1866 and 1867	68.25
14878	J. E. Waite, Port Crane, N. Y	do	1866 and 1868	23.22
	do	do	1870 and 1872	51.38
14879	Joseph Carrman, Port Dickinson, N. Y	do	1868 and 1869	23.43
14880	Philip A. Schryver, Port Ewen, N. Y	do	1867 and 1868	64.63
	do	do	1870 and 1872	45.40
	do	do	1868 and 1870	20.90
14881	Israel Burger, Port Ewen, N. Y	do	1866 and 1867	56.61
14882	J. W. Parker, Port Gibson, N. Y	do	1870 and 1872	65.98
14883	Albert D. Stedwell, Port Jackson, N. Y.	do	1868 and 1870	55.92
14884	Joseph E. Harris, Portland, N. Y	do	1874	40.10
14885	D. E. Butler, Portlandville, N. Y	do	do	5.26
14886	A. C. Parker, Potsdam, N. Y	do	1866	72.83
14887	Cyrus Davies, Potter, N. Y	do	1870	4.19
14888	V. Treadwell, Potter's Hollow, N. Y	do	1866 and 1868	55.94
14889	John D. Bishop, Pound Ridge, N. Y	do	1866 and 1867	3.49
	do	do	1874	2.21
14890	Alanson F. Monroe, Pound Ridge, N. Y.	do	1866	4.54
14891	John Tristram, Pound Ridge, N. Y	do	1868	6.45
	do	do	1867 and 1868	13.39
14892	H. Gillespie, Pratt's Hollow, N. Y	do	1866	12.11
14893	W. H. Makepiece, Preston, N. Y	do	1872	2.81
14894	Dennis McGraw, Purdy Creek, N. Y	do	1866 and 1868	7.02
14895	H. D. Easton, Putnam, N. Y	do	1868	17.29
	do	do	1868 and 1870	37.78
	do	do	1870 and 1871	7.53
14896	Ann A. Hayes, Quaker Hill, N. Y	do	1872 and 1874	23.04
	do	do	1870 and 1872	28.32
14897	Henry W. Rowland, Queens, N. Y	do	1870	10.44
	do	do	1870 and 1872	74.44
14898	Lyman Jenkins, Queensbury, N. Y	do	1871 and 1872	21.20
14899	C. T. Pierson, Ramapo Works, N. Y	do	1866 and 1868	37.50
	do	do	1868 and 1870	70.82
14900	Geo. H. Lounsbury, Randall, N. Y	do	1868 and 1873	3.63
	do	do	1868 and 1872	13.96
	do	do	1868 and 1870	21.58
14901	Henry Y. Robinson, Randallsville, N. Y.	do	1870 and 1872	89.26
14902	Joseph Brown, Randolph Centre, N. Y	do	1866 and 1868	7.96
	do	do	1868 and 1870	8.94
	do	do	1870 and 1872	2.16
	do	do	1872 and 1874	3.90
14903	Joseph L. Fowler, Ransomville, N. Y	do	1868 and 1870	70.79
	do	do	1866 and 1868	78.46
14904	James Kinne, Rapids, N. Y	do	do	13.54
	do	do	1872 and 1874	7.48
14905	Northrup P. Young, Rathboneville, N. Y.	do	1868 and 1870	22.26
	do	do	1866 and 1868	101.84
14906	Samuel H. Moore, Ravenswood, N. Y	do	1870 and 1871	19.51
	do	do	1868 and 1870	38.94
14907	Levi Shepherd, Reading Centre, N. Y	do	1866 and 1868	53.20
	do	do	1872 and 1873	15.31
14908	Burton G. Morse, Red Falls, N. Y	do	1868 and 1870	27.02
14909	Henry J. Burkett, Redfield, N. Y	do	do	17.44
14910	Gurdon C. Lane, Redford, N. Y	do	1867 and 1868	50.76
	do	do	1870 and 1872	29.39
14911	Mrs. Evaline E. Stone, Redford, N. Y	do	1872	2.73
	do	do	1872 and 1874	68.46
14912	Cyprian Powell, Red Rock, N. Y	do	1866 and 1867	6.54
14913	S. S. Wilcox, Red Rock, N. Y	do	1867 and 1868	5.07
	do	do	1868 and 1870	8.48
14914	Morgan Owen, Remsen, N. Y	do	1870 and 1872	62.54
14915	J. V. Paxson, Reserve, N. Y	do	1872 and 1874	32.12
	do	do	1870 and 1872	25.10
14916	Wm. J. Cole, Rexford, N. Y	do	1866 and 1867	6.86
14917	Francis X. Ward, Rexville, N. Y	do	1868 and 1869	11.02
14918	D. S. Hauber, Rexville, N. Y	do	1867 and 1868	15.71
14919	J. H. Richey, Rexville, N. Y	do	1871 and 1872	25.14
14920	Francis X. Ward, Rexville, N. Y	do	1868	9.51
14921	D. S. Hauber, Rexville, N. Y	do	1870	8.38
14922	J. H. Richey, Rexville, N. Y	do	1872 and 1874	17.76
14923	Smith Kelley, Reynoldsville, N. Y	do	1870 and 1872	19.52
14924	A. S. Brainard, Richburgh, N. Y	do	1867 and 1868	69.44
14925	J. Monroe Hyde, Richfield, N. Y	do	1868 and 1870	46.40
14926	Chauncy D. Rich, Richford, N. Y	do	1866 and 1868	82.14
14927	H. H. Mellen, Richland, N. Y	do	1870 and 1872	20.34
	do	do	1872 and 1874	37.64

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14825	Enos H. Odell, Osborne Hollow, N. Y	Compensation of postmasters readjusted, etc.	1867 and 1868	$6.70
14826	Seymour Green, Osceola, N. Y	do	1866 and 1868	41.18
14827	Wm. E. Hunt, Otto, N. Y	do	do	153.78
	do	do	1872 and 1874	104.64
14828	Uri T. Doolittle, Ouaquaga, N. Y	do	1866 and 1867	23.52
14829	Laura T. Dickinson, Ouaquaga, N. Y	do	1872 and 1874	41.14
14830	James Van Horn, Ovid, N. Y	do	1866	29.22
14831	Ellis Meaker, Owasco, N. Y	do	1874	9.06
14832	James W. Glover, Oxford, N. Y	do	1866 and 1868	299.70
14833	H. D. Edwards, Painted Post, N. Y	do	do	149.35
14834	Dan'l Asa Moore, Parishville, N. Y	do	do	222.82
14835	Robt. Watts, Parishville Centre, N. Y	do	1873	4.46
14836	Hugh H. Ross, Palermo, N. Y	do	1870 and 1871	1.49
14837	Edward Young, Parkville, N. Y	do	1870	79.81
14838	John E. Paterson, Parma Centre, N. Y	do	1867 and 1868	12.26
14839	B. H. Kent, Patten's Mills, N. Y	do	do	12.37
14840	Lewis G. Rugsley, Patterson, N. Y	do	1872 and 1874	67.44
14841	Rufus Hutchinson, Pavilion, N. Y	do	1871 and 1872	95.11
14842	A. W. Housinger, Peasleeville, N. Y	do	1866 and 1868	29.94
14843	L. M. Howes, Peasleeville, N. Y	do	1872 and 1874	12.24
	do	do	1870 and 1872	10.72
	do	do	1868	8.94
14844	Luther Leland, Pendleton Centre, N. Y	do	1866 and 1868	16.12
	do	do	1868 and 1870	8.18
14845	Jacob F. Hardick, Penfield Centre, N. Y	do	1866 and 1867	9.03
14846	Townsend Shaver, Pepacton, N. Y	do	1868 and 1870	5.34
14847	Henry Spicer, Perch River, N. Y	do	1866 and 1868	51.80
	do	do	1872 and 1874	9.56
	do	do	1868 and 1870	10.38
14848	Orrin Clark, Perrysburgh, N. Y	do	1866 and 1868	43.82
14849	Daniel Ball, Perry Centre, N. Y	do	1868 and 1870	53.34
	do	do	1868	7.44
14850	I. G. Bishop, Perry Centre, N. Y	do	1866 and 1868	52.10
14851	Lemuel F. Perry, Perry's Mills, N. Y	do	do	18.10
14852	W. C. Hill, Perryville, N. Y	do	do	77.78
14853	Elvinton A. Nash, Persia, N. Y	do	1867 and 1868	8.42
	do	do	1868 and 1870	15.96
	do	do	1870 and 1872	7.92
14854	Elbridge Eddy, Persia, N. Y	do	1866 and 1867	4.57
14855	A. S. Douglass, Peterborough, N. Y	do	1866 and 1868	147.62
14856	Melvin J. Miller, Peruville, N. Y	do	1871 and 1872	44.72
	do	do	1872 and 1874	25.34
14857	Pliny Hall, Peruville, N. Y	do	1866 and 1868	42.28
	do	do	1868 and 1870	9.62
	do	do	1870 and 1871	26.83
14858	Sam'l B. Scofield, Philadelphia, N. Y	do	1866 and 1868	38.22
14859	Constant E. Hutchinson, Phœnix, N. Y	do	1872	48.54
14860	A. M. Weller, Piffard, N. Y	do	1868 and 1870	25.28
	do	do	1870 and 1872	15.06
	do	do	1872 and 1874	25.80
14861	Warren Wheeler, Pine Bush, N. Y	do	1868	8.81
	do	do	1870 and 1872	28.10
14862	John H. Rowley, Pine Creek, N. Y	do	1866 and 1868	11.28
14863	G. L. Pierson, Pine Grove, N. Y	do	1870 and 1872	15.18
	do	do	1868 and 1870	6.24
	do	do	1868	1.68
14864	Richard W. Hill, Pine Hill, N. Y	do	1866 and 1868	12.16
14865	Chas. M. White, Pitcher Springs, N. Y	do	do	6.16
14866	Chester Card, Pittsfield, N. Y	do	do	6.42
	do	do	1868 and 1870	5.52
	do	do	1870 and 1872	4.94
	do	do	1872 and 1874	13.76
14867	Allen E. Wilbur, Pittstown, N. Y	do	1866 and 1867	15.74
14868	Jonas Carr, Pittstown, N. Y	do	1867 and 1868	6.22
	do	do	1872 and 1874	92.02
14869	Benj. B. Schenck, Plainville, N. Y	do	1866 and 1868	58.36
	do	do	1872 and 1874	34.56
14870	William A. Hunt, Plattskill, N. Y	do	1866 and 1868	14.96
14871	Benj. I. Van Keuren, Pleasant Plains, N. Y.	do	do	12.82
	do	do	1870 and 1872	6.04
14872	Morgan Augsbury, Plessis, N. Y	do	1866	11.06
14873	James H. Bonesteel, Poestenkill, N. Y	do	1870 and 1872	67.38
14874	Betsie A. Clark, Point Peninsula, N. Y.	do	1872 and 1874	8.06
	do	do	1869 and 1870	8.78
	do	do	1870 and 1872	10.12
14875	E. Davenport, Poland Centre, N. Y	do	1866 and 1868	43.86
	do	do	1872 and 1874	14.80

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14876	Alva Brown, Poney Hollow, N. Y.	Compensation of postmasters readjusted, etc.	1866 and 1868	$25.74
14877	Levi Truesdell, Portageville, N. Y	do	1866 and 1867	68.25
14878	J. E. Waite, Port Crane, N. Y	do	1866 and 1868	23.22
	do	do	1870 and 1872	51.38
14879	Joseph Carrman, Port Dickinson, N. Y.	do	1868 and 1869	23.43
14880	Philip A. Schryver, Port Ewen, N. Y.	do	1867 and 1868	64.63
	do	do	1870 and 1872	45.40
	do	do	1868 and 1870	20.90
14881	Israel Burger, Port Ewen, N. Y	do	1866 and 1867	56.61
14882	J. W. Parker, Port Gibson, N. Y	do	1870 and 1872	65.96
14883	Albert D. Stedwell, Port Jackson, N. Y.	do	1868 and 1870	55.92
14884	Joseph E. Harris, Portland, N. Y	do	1874	40.10
14885	D. E. Butler, Portlandville, N. Y	do	do	5.26
14886	A. C. Parker, Potsdam, N. Y	do	1866	72.83
14887	Cyrus Davies, Potter, N. Y	do	1870	4.19
14888	V. Treadwell, Potter's Hollow, N. Y	do	1866 and 1868	55.94
14889	John D. Bishop, Pound Ridge, N. Y	do	1866 and 1867	3.49
	do	do	1874	2.21
14890	Alanson F. Monroe, Pound Ridge, N. Y	do	1866	4.54
14891	John Tristram, Pound Ridge, N. Y	do	1868	6.45
	do	do	1867 and 1868	13.39
14892	H. Gillespie, Pratt's Hollow, N. Y	do	1866	12.11
14893	W. H. Makepiece, Preston, N. Y	do	1872	2.81
14894	Dennis McGraw, Purdy Creek, N. Y	do	1866 and 1868	7.02
14895	H. D. Easton, Putnam, N. Y	do	1868	17.29
	do	do	1868 and 1870	37.78
	do	do	1870 and 1871	7.53
14896	Ann A. Hayes, Quaker Hill, N. Y	do	1872 and 1874	23.04
	do	do	1870 and 1872	28.32
14897	Henry W. Rowland, Queens, N. Y	do	1870	10.44
	do	do	1870 and 1872	74.44
14898	Lyman Jenkins, Queensbury, N. Y	do	1871 and 1872	21.20
14899	C. T. Pierson, Ramapo Works, N. Y	do	1866 and 1868	37.50
	do	do	1868 and 1870	70.82
14900	Geo. H. Lounsbury, Randall, N. Y	do	1868 and 1873	3.63
	do	do	1868 and 1872	13.96
	do	do	1868 and 1870	21.58
14901	Henry Y. Robinson, Randallsville, N. Y	do	1870 and 1872	39.26
14902	Joseph Brown, Randolph Centre, N. Y.	do	1866 and 1868	7.96
	do	do	1868 and 1870	8.94
	do	do	1870 and 1872	2.16
	do	do	1872 and 1874	3.90
14903	Joseph L. Fowler, Ransomville, N. Y.	do	1868 and 1870	70.79
	do	do	1866 and 1868	78.46
14904	James Kinne, Rapids, N. Y	do	do	13.54
	do	do	1872 and 1874	7.48
14905	Northrup P. Young, Rathboneville, N. Y.	do	1868 and 1870	22.26
	do	do	1866 and 1868	101.84
14906	Samuel H. Moore, Ravenswood, N. Y	do	1870 and 1871	19.51
	do	do	1868 and 1870	38.94
14907	Levi Shepherd, Reading Centre, N. Y	do	1866 and 1868	53.20
	do	do	1872 and 1873	15.31
14908	Burton G. Morse, Red Falls, N. Y	do	1868 and 1870	27.02
14909	Henry J. Burkett, Redfield, N. Y	do	do	17.44
14910	Gurdon C. Lane, Redford, N. Y	do	1867 and 1868	50.76
	do	do	1870 and 1872	29.39
14911	Mrs. Evaline E. Stone, Redford, N. Y	do	1872	2.73
	do	do	1872 and 1874	68.46
14912	Cyprian Powell, Red Rock, N. Y	do	1866 and 1867	6.54
14913	S. S. Wilcox, Red Rock, N. Y	do	1867 and 1868	5.07
	do	do	1868 and 1870	8.48
14914	Morgan Owen, Remsen, N. Y	do	1870 and 1872	62.54
14915	J. V. Paxson, Reserve, N. Y	do	1872 and 1874	32.12
	do	do	1870 and 1872	25.10
14916	Wm. I. Cole, Rexford, N. Y	do	1866 and 1867	6.26
14917	Francis X. Ward, Rexville, N. Y	do	1868 and 1869	11.02
14918	D. S. Hanber, Rexville, N. Y	do	1867 and 1868	15.71
14919	J. H. Richey, Rexville, N. Y	do	1871 and 1872	25.14
14920	Francis X. Ward, Rexville, N. Y	do	1868	9.51
14921	D. S. Hanber, Rexville, N. Y	do	1870	8.38
14922	J. H. Richey, Rexville, N. Y	do	1872 and 1874	17.76
14923	Smith Kelley, Reynoldsville, N. Y	do	1870 and 1872	19.52
14924	A. S. Brainard, Richburgh, N. Y	do	1867 and 1868	69.44
14925	J. Monroe Hyde, Richfield, N. Y	do	1868 and 1870	46.40
14926	Chauncy D. Rich, Richford, N. Y	do	1866 and 1868	82.14
14927	H. H. Mellen, Richland, N. Y	do	1870 and 1872	20.34
	do	do	1872 and 1874	37.64

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14928	Seymour C. Davis, Richland Station, N. Y.	Compensation of postmasters readjusted, etc.	1868	$2.49
14929	Harvey D. Chandler, Richville, N. Y	do	1866 and 1868	57.06
14930	Thos. B. Rider, Rider's Mills, N. Y	do	do	40.64
	do	do	1872 and 1874	13.34
14931	Harlan P. Hall, Ridgeburg, N. Y	do	1868 and 1869	24.13
14932	Mary C. Hemphill, Ridgeway, N. Y	do	1866 and 1867	24.90
14933	Calvin T. Hazen, Rifton Glen, N. Y	do	1867 and 1868	42.12
	do	do	1868 and 1870	31.66
	do	do	1870 and 1872	14.42
	do	do	1872 and 1873	4.55
14934	Andrew Shanger, Risingville, N. Y	do	do	3.85
	do	do	1870 and 1872	7.32
	do	do	1866 and 1868	15.64
14935	James H. Jennings, Rockaway, N. Y	do	do	53.82
	do	do	1870 and 1872	103.30
	do	do	1868 and 1870	102.82
14936	James T. Graves, Rockdale, N. Y	do	do	14.96
14937	Burr Wilson, Rockland, N. Y	do	1872	11.54
14938	Alva M. Newcomb, Rock Stream, N. Y	do	1870 and 1872	110.42
	do	do	1868 and 1870	38.42
14939	Clinton F. Combs, Rockville Centre, N. Y.	do	1870 and 1872	35.80
14940	Eli Dennis, Rockwood, N. Y	do	1866 and 1868	38.26
14941	Jackson Valentine, Rose, N. Y	do	1866	20.52
14942	James D. Rogers, Rose Hill, N. Y	do	1866 and 1868	9.92
14943	Wm. W. Leonard, Rossie, N. Y	do	1868 and 1870	54.03
14944	John Bowdish, Rural Grove, N. Y	do	1872 and 1874	43.06
	do	do	1868 and 1870	18.70
	do	do	1866 and 1868	51.04
14945	P. D. Betticher, Russia, N. Y	do	1866	2.46
14946	E. Seavey, Russia, N. Y	do	1873 and 1874	16.18
14947	Byron G. Barker, Russia, N. Y	do	1870	2.09
	do	do	1870 and 1872	37.38
	do	do	1872	10.79
14948	James W. Gregg, Rynex Corners, N. Y	do	1871 and 1872	20.04
14949	Augustus Duckwitz, Saint Johnsburgh, N. Y.	do	1870 and 1872	21.06
	do	do	1868 and 1870	15.76
14950	Samuel B. Clark, Salem Centre, N. Y	do	1866 and 1868	21.74
	do	do	1868 and 1870	15.40
14951	Daniel A. Northrup, Salisbury Centre, N. Y.	do	1870 and 1872	146.88
	do	do	1866 and 1868	133.56
	do	do	1868 and 1870	156.20
	do	do	1872 and 1874	111.06
14952	Dwight E. Barnes, Sand Lake, N. Y	do	1866 and 1867	36.27
14953	Hector S. Grant, Samsonville, N. Y	do	1869 and 1870	2.85
	do	do	1870 and 1872	18.28
	do	do	1872 and 1874	25.44
14954	Peter Williams, Sandusky, N. Y	do	1866 and 1868	201.68
	do	do	1870 and 1872	29.78
14955	Almon Chapin, Sandusky, N. Y	do	1867 and 1868	136.46
14956	C. E. Thomas, Sandy Creek, N. Y	do	1866 and 1867	75.37
14957	Andrew J. Baker, Saranac Lake, N. Y	do	1868	4.54
14958	Horatio W. Simons, Sardinia, N. Y	do	1866 and 1868	42.72
	do	do	1870 and 1872	26.48
14959	Joseph N. Winchell, Sangerfield, N. Y	do	1866 and 1868	50.52
	do	do	1870 and 1872	38.52
14960	Thomas S. Dawes, Saugerties, N. Y	do	1866 and 1868	455.28
14961	John Waring, Saville, N. Y	do	1866 and 1867	7.08
14962	T. J. Boileau, Savona, N. Y	do	1868	13.22
	do	do	1868 and 1869	17.32
14963	James G. McElwell, Savona, N. Y	do	1866 and 1867	31.38
14964	Chas. S. Davis, Savona, N. Y	do	1869 and 1870	26.47
14965	James Van Velson, Scarborough, N. Y	do	1870 and 1872	314.98
	do	do	1872 and 1874	617.42
	do	do	1868 and 1870	449.42
14966	Jacob W. Lewis, Schodack Centre, N. Y.	do	1866 and 1868	11.02
14967	Theodore Kenyon, Schroom Lake, N. Y.	do	1867 and 1868	43.03
14968	Joseph R. Seamans, Schroom Lake, N. Y.	do	1866 and 1867	31.41
14969	John Taylor, Schroom Lake, N. Y	do	1868	15.31
	do	do	1868 and 1870	75.44
14970	Russell Root, Schroom River, N. Y	do	1866 and 1868	26.80
14971	T. G. Palmer, Schultzville, N. Y	do	1870 and 1872	13.22
14972	A. B. Angell, Sciota, N. Y	do	1868 and 1870	26.48
14973	John Snyder, Scipio, N. Y	do	do	42.02
	do	do	1872 and 1874	31.00

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
14974	Silas Elliott, Scipioville, N. Y	Compensation of postmasters readjusted, etc.	1870 and 1872	$146.37
14975	Chas. B. Broeffle, Scotch Bush, N. Y	do	do	8.56
14976	A. A. Fonda, Scotchtown, N. Y	do	1866 and 1868	14.48
	do	do	1868 and 1870	8.36
14977	H. W. Babcock, Scott, N. Y	do	1866 and 1868	137.46
14978	John C. Baylis, Seaford, N. Y	do	1872 and 1874	45.52
14979	David F. Sears, Searsburgh, N. Y	do	1866 and 1868	43.06
14980	F. M. Jones, Seeley Creek, N. Y	do	do	72.12
	do	do	1872 and 1874	11.20
14981	A. R. Morton, Selden, N. Y	do	1866 and 1868	52.76
	do	do	1870 and 1872	31.50
14982	James D. Bell, Sempronius, N. Y	do	1869 and 1870	8.26
14983	Dorr Smith, Sempronius, N. Y	do	1866 and 1868	25.56
	do	do	1868	2.75
14984	Clark B. Griggs, Seward, N. Y	do	1872 and 1874	31.96
	do	do	1871 and 1872	21.04
14985	James Gillespie, Shandakin, N. Y	do	1867 and 1868	42.21
14986	Robert W. Brown, Sharon, N. Y	do	1870 and 1872	46.44
14987	Conkline Haight, Sharon Station, N. Y	do	1868 and 1870	42.60
	do	do	1870 and 1872	19.86
14988	John Kline, Shawnee, N. Y	do	1866 and 1868	19.74
	do	do	1870 and 1872	8.88
14989	A. B. White, Shed's Corners, N. Y	do	1866 and 1868	19.64
	do	do	1872 and 1874	32.16
	do	do	1868 and 1870	8.14
14990	William B. Perry, Sheldon, N. Y	do	do	13.16
	do	do	1866 and 1868	67.48
14991	John Harris, Sheldrake, N. Y	do	1870 and 1872	26.26
	do	do	1866 and 1868	48.00
14992	Francis Leach, Shirley, N. Y	do	1866 and 1867	10.79
14993	Louis Purdy, Shrub Oak, N. Y	do	1870 and 1872	26.34
	do	do	1868 and 1870	29.52
14994	Duncan Corydon, Shushan, N. Y	do	1870 and 1872	112.08
14995	Cornelius J. Bouck, Shutter's Corners, N. Y.	do	1868 and 1869	2.28
14996	Isaac Shutters, Shutter's Corners, N. Y.	do	1869 and 1870	5.70
	do	do	1870 and 1871	7.48
14997	Ambrose S. Lewis, Shutter's Corners, N. Y.	do	1871 and 1872	12.50
	do	do	1872 and 1874	7.52
14998	Harvey B. Morennus, Sidney Centre, N. Y.	do	1870 and 1872	21.60
14999	William Baker, Sidney Centre, N. Y	do	1866 and 1868	35.42
15000	Mrs. Lillie A. Temple, Siloam, N. Y	do	do	16.39
15001	C. D. Austin, Siloam, N. Y	do	1866 and 1869	10.40
	do	do	1866 and 1868	1.67
15002	Smith Clark, Silver Creek, N. Y	do	1872 and 1874	444.38
	do	do	1871 and 1872	81.40
15003	John Bull, Slaterville, N. Y	do	1866 and 1868	69.88
	do	do	1872	13.85
	do	do	1870 and 1872	47.22
15004	Daniel R. Gallup, Sloansville, N. Y	do	do	30.14
15005	Charles Curkendoll, Smithsborough, N. Y	do	1866 and 1867	11.68
15006	James Darling, Smithtown Branch, N. Y.	do	1870	13.59
15007	Charles Second, Smith Valley, N. Y	do	1866 and 1868	17.48
15008	A. Shepardson, Smyrna, N. Y	do	1868 and 1869	40.92
15009	Richard Borradaile, Sodus Centre, N. Y.	do	1869 and 1870	15.52
	do	do	1872 and 1873	16.77
	do	do	1870 and 1872	22.12
15010	Absalom Taylor, Sodus Centre, N. Y	do	1868	5.17
	do	do	1867 and 1868	11.44
15011	Mrs. E. A. Sturgis, Sodus Centre, N. Y	do	1866 and 1867	19.07
15012	Sarah M. Briggs, Somerset, N. Y	do	1870 and 1872	58.33
15013	Charles Witt, Somerville, N. Y	do	do	18.10
15014	George W. Carr, South Addison, N. Y	do	1866 and 1868	54.98
	do	do	1868 and 1870	15.12
15015	Milo F. Winchester, South Amenia, N. Y	do	do	20.50
15016	Henry F. Herrick, Southampton, N. Y	do	do	79.28
15017	Eliza McCall, South Argyle, N. Y	do	1866 and 1868	19.16
	do	do	1870 and 1872	24.04
	do	do	1868 and 1870	34.96
15018	Jacob Boyce, South Ballston, N. Y	do	1866 and 1868	18.14
	do	do	1872 and 1874	16.03
	do	do	1868 and 1870	63.76
15019	James V. Wagner, South Barre, N. Y	do	1870 and 1872	7.58
15020	Ogden Sears, South Barre, N. Y	do	1868 and 1870	20.58
15021	H. R. Jerome, South Berlin, N. Y	do	1866 and 1868	22.80
	do	do	1868 and 1869	7.03

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15022	Charles A. Bateman, South Cameron, N. Y.	Compensation of postmasters readjusted, etc.	1872 and 1874	$9.60
	do	do	1870 and 1872	10.86
	do	do	1868 and 1870	16.82
15023	Elam Brown, South Champion, N. Y.	do	do	12.46
15024	Chester A. Biggs, South Columbia, N. Y.	do	1866 and 1868	6.52
	do	do	1868 and 1870	10.53
15025	Charles Howland, South Danby, N. Y.	do	1868	9.99
15026	Charles L. Wright, South Danby, N. Y.	do	1870 and 1872	4.94
	do	do	1868 and 1870	55.22
15027	Miner St. John, South Danby, N. Y.	do	1866 and 1867	21.24
15028	Ira A. Hammond, South Edwards, N. Y.	do	1870 and 1872	15.20
	do	do	1868 and 1870	13.90
	do	do	1866 and 1868	23.86
15029	Calvin Stevens, South Gilboa, N. Y.	do	do	22.22
	do	do	1868 and 1870	10.16
15030	Gardner T. Choate, South Gilboa, N. Y.	do	1871 and 1872	7.02
15031	Cornelius V. Kenyon, South Glens Falls, N. Y.	do	1866 and 1868	64.72
15032	Zephamiah T. Barker, South Glens Falls, N. Y.	do	1870 and 1872	46.11
15033	M. J. Gere, South Granby, N. Y.	do	1868 and 1870	8.66
15034	S. B. Munson, South Hamilton, N. Y.	do	do	10.86
	do	do	1870 and 1872	13.40
15035	Lacell L. Hubbard, South Hartwick, N. Y.	do	1871 and 1872	19.81
15036	A. C. Ives, South Lansing, N. Y.	do	1866 and 1868	29.92
15037	J. W. Huntling, Southold, N. Y.	do	1866 and 1867	57.74
15038	David B. Parce, South Otselic, N. Y.	do	1866 and 1868	40.00
15039	B. F. Hewitt, South Owego, N. Y.	do	1870 and 1872	6.40
	do	do	1872 and 1874	2.94
	do	do	1868 and 1870	6.42
	do	do	1866 and 1868	21.88
15040	James Smith, South Plattsburgh, N. Y.	do	1867 and 1868	11.55
15041	James McCarty, South Plattsburgh, N. Y.	do	1872 and 1874	17.50
	do	do	1866 and 1867	6.93
	do	do	1870 and 1872	17.52
	do	do	1868 and 1870	7.26
15042	Joshua W. Egleston, South Pultney, N. Y.	do	1870 and 1872	20.23
15043	Hiram L. Clark, South Pultney, N. Y.	do	1866 and 1868	43.09
	do	do	1870	2.89
15044	Allen Waldo, South Rutland, N. Y.	do	1866 and 1868	17.54
15045	Isaac Miller, South Schodack, N. Y.	do	1868	9.19
	do	do	1866 and 1868	12.32
15046	M. P. Sherman, South Sodus, N. Y.	do	1869 and 1870	27.99
	do	do	1872 and 1874	27.46
15047	David S. Warner, South Wales, N. Y.	do	1868 and 1870	28.10
	do	do	1866 and 1868	20.50
15048	J. J. Chase, South West Oswego, N. Y.	do	1866 and 1867	108.27
15049	Mathias Covert, South Wilson, N. Y.	do	1868 and 1870	12.62
15050	A. Becker, South Worcester, N. Y.	do	1866 and 1868	163.66
15051	B. McDaniels, Spafford, N. Y.	do	1869 and 1870	16.14
	do	do	1872 and 1874	22.18
15052	James Tuthill, Speonk, N. Y.	do	1870 and 1872	29.12
	do	do	1872 and 1874	11.04
15053	Mrs. H. Cohen, Sprakers Basin, N. Y.	do	1868 and 1870	43.04
15054	James H. Ward, Spring Brook, N. Y.	do	1870 and 1872	17.27
	do	do	1866 and 1868	32.80
15055	John Lusee, Springfield Centre, N. Y.	do	1868	17.13
	do	do	1868 and 1870	127.12
	do	do	1870 and 1872	70.48
15056	Julius D. Parsons, Springs, N. Y.	do	do	6.52
	do	do	1868 and 1870	10.42
	do	do	1872 and 1874	7.52
	do	do	1866 and 1868	55.30
15057	Maurice Brown, Spring Water, N. Y.	do	1870 and 1872	59.48
	do	do	1868 and 1870	64.88
15058	George A. Stephens, Stamford, N. Y.	do	1870 and 1872	191.78
15059	Alfred R. Vail, Stanfordville, N. Y.	do	do	42.92
	do	do	1872 and 1874	11.12
15060	M. D. Lawrence, Stanley, N. Y.	do	1870 and 1872	31.94
15061	John H. Ford, Stedman, N. Y.	do	1866 and 1868	17.28
	do	do	1870 and 1872	6.46
15062	H. Polmatur, Stephens' Mills, N. Y.	do	1866 and 1867	3.65
15063	Randall A. Brown, Stephentown, N. Y.	do	1868 and 1870	40.82
	do	do	1868	8.28
15064	Howard Sterling, Sterling Bush, N. Y.	do	1866 and 1868	33.58
	do	do	1872 and 1874	6.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15158	Isaac Lane, Voak, N. Y	Compensation of postmasters readjusted, etc.	1871 and 1872	$7.21
	do	do	1872 and 1874	23.62
15159	R. G. Bassett, Volney, N. Y	do	1870 and 1872	15.72
	do	do	1872 and 1874	21.66
	do	do	1868 and 1870	29.34
15160	Mariette F. Bisbee, Volusia, N. Y	do	1866 and 1868	8.84
15161	Mrs. Mary J. Northrup, Waddington, N. Y.	do	1868	8.55
15162	Daniel F. Payne, Wadham's Mills, N. Y.	do	1870	1.42
	do	do	1870 and 1872	58.78
15163	W. H. Olmstead, Walesville, N. Y	do	1866 and 1867	26.85
15164	Jacob Walker, Walker Valley, N. Y	do	1866 and 1868	14.21
15165	William R. Head, Wallace, N. Y	do	1869	7.49
15166	Marcus A. Peck, Wallace, N. Y	do	1870 and 1872	26.28
	do	do	1870	7.49
15167	A. A. Wemple, Wampsville, N. Y	do	do	1.19
	do	do	1870 and 1872	27.14
15168	M. N. Dickinson, Warrensburgh, N. Y	do	1866 and 1868	160.22
15169	M. K. Lewis, Wassaic, N. Y	do	1872 and 1874	53.24
	do	do	1870 and 1872	36.68
15170	John Moss, Waterburgh, N. Y	do	1866 and 1868	14.92
15171	Ephraim C. Bently, Waterport, N. Y	do	do	80.36
15172	Edward M. Thompson, Watervale, N. Y	do	1869 and 1870	4.20
	do	do	1872 and 1874	5.98
	do	do	1870 and 1872	19.44
15173	R. T. Reed, Watervale, N. Y	do	1868 and 1870	2.52
15174	Thomas K. Wilkinson, Waterville, N. Y	do	1866 and 1868	148.14
15175	James Pearse, Watervleit Centre, N. Y	do	do	30.10
	do	do	1872 and 1870	36.22
15176	Joel H. Putnam, Wayne Centre, N. Y	do	1866	5.18
15177	James Kiernan, Weedsport, N. Y	do	1866 and 1868	156.26
15178	Charles C. Adams, Weedsport, N. Y	do	do	45.40
15179	Daniel Church, Wegatchie, N. Y	do	1869 and 1870	23.74
	do	do	1868	16.58
15180	William G. Fell, Wegatchie, N. Y	do	1870	3.96
15181	L. M. Phillips, Wellsville, N. Y	do	1867 and 1868	194.49
15182	Mason L. Herrick, Weltonville, N. Y	do	1868	1.22
	do	do	1870 and 1872	13.50
	do	do	1868 and 1870	8.40
15183	John Hodgson, Weverton, N. Y	do	1868 and 1869	13.43
	do	do	1866 and 1868	89.16
15184	Walter C. Knight, West Almond, N. Y	do	do	13.22
15185	Joseph Pero, West Amboy, N. Y	do	1872 and 1874	22.14
	do	do	1870 and 1872	79.24
15186	Andrew Hartshorn, West Batavia, N. Y.	do	1867 and 1868	6.12
	do	do	1868 and 1870	12.24
15187	C. M. Hendee, West Bloomfield, N. Y	do	1870 and 1872	69.98
	do	do	1867 and 1868	54.64
15188	Lewis Breese, West Burlington, N. Y	do	1872 and 1874	38.08
	do	do	1870 and 1872	22.30
	do	do	1868 and 1870	24.08
15189	George Doolittle, West Butler, N. Y	do	1866 and 1867	9.70
15190	Thomas W. McKee, West Camden, N. Y.	do	1872 and 1874	22.04
	do	do	1868 and 1870	45.98
	do	do	1868 and 1870	23.72
15191	John L. Pearse, West Charlton, N. Y	do	1866 and 1868	39.16
	do	do	1868 and 1870	42.50
	do	do	1872	7.91
15192	Judith M. Dodge, West Chazy, N. Y	do	1866 and 1868	73.66
15193	Isa Patchen, West Danby, N. Y	do	do	15.70
	do	do	1868 and 1870	18.56
	do	do	1872 and 1874	5.84
15194	John S. Colson, West Day, N. Y	do	1866 and 1867	26.49
15195	H. H. Primrose, West Dryden, N. Y	do	1866 and 1868	19.78
	do	do	1872 and 1874	10.94
15196	Leverett L. Hamilton, West Eaton, N. Y	do	1868 and 1870	39.28
15197	Farley Fisher, Westerloo, N. Y	do	1870 and 1871	19.89
	do	do	1866 and 1868	52.38
15198	Arson Fitch, West Exeter, N. Y	do	1868 and 1869	8.19
15199	Henry Bell, West Fayette, N. Y	do	1866 and 1868	13.68
15200	Rufus Farrington, West Fort Ann, N. Y.	do	do	30.58
15201	Edgar Akeley, West Fulton, N. Y	do	1870	4.12
	do	do	1872 and 1874	10.10
	do	do	1870 and 1872	13.54
15202	George Schermerhorn, West Fulton, N. Y	do	1868	2.61
	do	do	1868 and 1869	6.88
15203	Robert Miller, West Galway, N. Y	do	1866 and 1868	79.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15022	Charles A. Bateman, South Cameron, N. Y.	Compensation of postmasters readjusted, etc.	1872 and 1874	$9.60
	do	do	1870 and 1872	10.86
	do	do	1868 and 1870	16.82
15023	Elam Brown, South Champion, N. Y.	do	do	12.46
15024	Chester A. Biggs, South Columbia, N. Y.	do	1866 and 1868	6.52
	do	do	1868 and 1870	10.53
15025	Charles Howland, South Danby, N. Y.	do	1868	9.99
15026	Charles L. Wright, South Danby, N. Y.	do	1870 and 1872	4.94
	do	do	1868 and 1870	55.22
15027	Miner St. John, South Danby, N. Y.	do	1866 and 1867	21.24
15028	Ira A. Hammond, South Edwards, N. Y.	do	1870 and 1872	15.20
	do	do	1868 and 1870	13.90
	do	do	1866 and 1868	23.86
15029	Calvin Stevens, South Gilboa, N. Y.	do	do	22.22
	do	do	1868 and 1870	10.16
15030	Gardner T. Choate, South Gilboa, N. Y.	do	1871 and 1872	7.02
15031	Cornelius V. Kenyon, South Glens Falls, N. Y.	do	1866 and 1868	64.72
15032	Zephamiah T. Barker, South Glens Falls, N. Y.	do	1870 and 1872	46.11
15033	M. J. Gere, South Granby, N. Y.	do	1868 and 1870	8.66
15034	S. B. Munson, South Hamilton, N. Y.	do	do	10.86
	do	do	1870 and 1872	13.40
15035	Lacell L. Hubbard, South Hartwick, N. Y.	do	1871 and 1872	19.81
15036	A. C. Ives, South Lansing, N. Y.	do	1866 and 1868	29.92
15037	J. W. Huntling, Southold, N. Y.	do	1866 and 1867	57.74
15038	David B. Parce, South Otselic, N. Y.	do	1866 and 1868	40.00
15039	B. F. Hewitt, South Owego, N. Y.	do	1870 and 1872	6.40
	do	do	1872 and 1874	2.94
	do	do	1868 and 1870	6.42
	do	do	1866 and 1868	21.88
15040	James Smith, South Plattsburgh, N. Y.	do	1867 and 1868	11.55
15041	James McCarty, South Plattsburgh, N. Y.	do	1872 and 1874	17.50
	do	do	1866 and 1867	6.93
	do	do	1870 and 1872	17.52
	do	do	1868 and 1870	7.26
15042	Joshua W. Egleston, South Pultney, N. Y.	do	1870 and 1872	20.23
15043	Hiram L. Clark, South Pultney, N. Y.	do	1866 and 1868	43.09
	do	do	1870	2.89
15044	Allen Waldo, South Rutland, N. Y.	do	1866 and 1868	17.54
15045	Isaac Miller, South Schodack, N. Y.	do	1868	9.19
	do	do	1866 and 1868	12.33
15046	M. P. Sherman, South Sodus, N. Y.	do	1869 and 1870	27.89
	do	do	1872 and 1874	27.46
15047	David S. Warner, South Wales, N. Y.	do	1868 and 1870	28.10
	do	do	1866 and 1868	20.50
15048	J. J. Chase, South West Oswego, N. Y.	do	1866 and 1867	108.27
15049	Mathias Covert, South Wilson, N. Y.	do	1868 and 1870	12.62
15050	A. Becker, South Worcester, N. Y.	do	1866 and 1868	163.66
15051	B. McDaniels, Spafford, N. Y.	do	1869 and 1870	16.14
	do	do	1872 and 1874	22.18
15052	James Tuthill, Speonk, N. Y.	do	1870 and 1872	29.12
	do	do	1872 and 1874	11.04
15053	Mrs. H. Cohen, Sprakers Basin, N. Y.	do	1868 and 1870	43.04
15054	James H. Ward, Spring Brook, N. Y.	do	1870 and 1872	17.27
	do	do	1866 and 1868	32.80
15055	John Lusee, Springfield Centre, N. Y.	do	1868	17.13
	do	do	1868 and 1870	127.12
	do	do	1870 and 1872	70.48
15056	Julius D. Parsons, Springs, N. Y.	do	do	6.52
	do	do	1868 and 1870	10.42
	do	do	1872 and 1874	7.52
	do	do	1866 and 1868	55.30
15057	Maurice Brown, Spring Water, N. Y.	do	1870 and 1872	59.48
	do	do	1868 and 1870	64.88
15058	George A. Stephens, Stamford, N. Y.	do	1870 and 1872	191.78
15059	Alfred R. Vail, Stanfordville, N. Y.	do	do	42.92
	do	do	1872 and 1874	11.12
15060	M. D. Lawrence, Stanley, N. Y.	do	1870 and 1872	31.94
15061	John H. Ford, Stedman, N. Y.	do	1866 and 1868	17.28
	do	do	1870 and 1872	6.46
15062	H. Polmatur, Stephens' Mills, N. Y.	do	1866 and 1867	3.65
15063	Randall A. Brown, Stephentown, N. Y.	do	1868 and 1870	40.82
	do	do	1868	8.28
15064	Howard Sterling, Sterling Bush, N. Y.	do	1866 and 1868	33.58
	do	do	1872 and 1874	6.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15247	Dyer P. Sisson, White Creek, N. Y	Compensation of postmasters readjusted, etc.	1870 and 1872	$19.64
15248	D. B. Kinne, White Lake, N. Y	do	1868 and 1870	32.14
15249	Stephen L. Hagedorn, Whitesides Corners, N. Y.	do	1866 and 1868	14.52
	do	do	1868 and 1870	9.22
	do	do	1872 and 1874	9.50
15250	Alonzo B. Wright, Whitestone, N. Y	do	1866	37.55
15251	D. B. Harrigan, Whitesville, N. Y	do	1871 and 1872	39.51
15252	Edson J. Shepard, Whitesville, N. Y	do	1868 and 1869	28.72
15253	C. S. Olmstead, Whitney's Point, N. Y	do	1871 and 1872	84.67
15254	Henry H. Pitts, Wilbur, N. Y	do	1868 and 1870	136.40
15255	John Wiley, Wileysville, N. Y	do	1866 and 1868	2.94
	do	do	1872 and 1874	3.32
15256	Anson M. Kimball, Wilson Creek, N. Y.	do	1866 and 1868	6.80
	do	do	1868 and 1870	3.10
15257	do	do	1870 and 1872	2.52
15258	Andrew J. Butts, Windsor, N. Y	do	1866 and 1868	52.56
15259	James R. Belden, Windsor, N. Y	do	1866	14.34
15260	Samuel McKee, Winfield, N. Y	do	1870 and 1872	23.68
15261	L. L. Wilcox, Wirt Centre, N. Y	do	1868 and 1870	16.62
	A. B. Hopkins, Wiscoy, N. Y	do	1866 and 1868	86.70
15262	do	do	1868 and 1870	22.04
15263	John Haight, Wolf Hill, N. Y	do	1866 and 1868	9.88
	M. T. Morss, Woodbourne, N. Y	do	do	43.14
15264	do	do	1870 and 1872	41.38
15265	James S. Warner, Woodhull, N. Y	do	1866	37.42
	David Woodworth, Woodland, N. Y	do	1868	3.72
15266	do	do	1868 and 1870	48.54
15267	H. D. H. Snyder, Woodland, N. Y	do	1866 and 1868	12.40
	William W. Wood, Wood's Falls, N. Y	do	do	14.82
	do	do	1868 and 1870	26.62
	do	do	1872 and 1874	43.60
15268	do	do	1870 and 1872	16.42
15269	George M. Wood, Woodville, N. Y	do	1866 and 1868	37.80
	Isaac Woodward, Woodward's Hollow, N. Y.	do	do	9.66
	do	do	1868 and 1870	10.30
	do	do	1872 and 1874	4.74
15270	Henry L. Potter, Worthville, N. Y	do	1868 and 1870	10.39
15271	Lester A. Casey, Wynantskill, N. Y	do	do	5.84
15272	A. P. Thompson, Wyoming, N. Y	do	1866 and 1868	65.75
15273	Birdsall Yale, Yaleville, N. Y	do	1868 and 1869	9.67
15274	James McIntyre, York, N. Y	do	1866 and 1868	71.06
15275	Chester Seymour, York, N. Y	do	1869 and 1870	24.20
	do	do	1872 and 1874	55.22
	do	do	1870 and 1872	50.94
15276	Thomas W. Baley, Young Hickory, N. Y.	do	1866 and 1868	12.24
15277	A. Harris, Youngstown, N. Y	do	do	177.08
15278	Jacob Pinckney, Youngsville, N. Y	do	1872 and 1874	14.26
15279	William E. Steele, Youngsville, N. Y	do	1866 and 1868	44.86
15280	Alvin W. Osborn, Abbottsburgh, N. C	do	1872	.94
15281	J. C. Royster, Allensville, N. C	do	1868 and 1870	6.08
	do	do	1872 and 1873	3.83
	do	do	1870 and 1872	6.42
15282	Mary J. Napier, Ansonville, N. C	do	do	105.88
	do	do	1872 and 1873	50.92
15283	Robert J. Norris, Averysborough, N. C	do	1870 and 1872	8.30
	do	do	1872 and 1874	19.00
15284	H. H. Lazelle, Bath, N. C	do	1871 and 1872	18.86
15285	George T. Davis, Brattleborough, N. C	do	1868 and 1869	10.11
15286	Jacob Ing, Brattleborough, N. C	do	1869	12.29
15287	Mrs. Ann E. Cherry, Bay River, N. C	do	1870 and 1872	26.14
15288	M. A. Moore, Beaver Dam, N. C	do	do	4.78
15289	Amelia S. Grala, Bethania, N. C	do	do	27.66
	do	do	1872 and 1874	14.86
15290	Elizabeth Christmas, Black Creek, N. C	do	1870 and 1872	16.78
	do	do	1872 and 1874	64.96
15291	Fristan Bostick, Bostick's Mills, N. C	do	1868 and 1870	17.02
15292	John L. Blythe, Bowman's Bluff, N. C	do	1870 and 1872	16.56
15293	J. Williams, Burnsville, N. C	do	1868 and 1870	12.56
15294	J. W. Mallet, Carey, N. C	do	1872 and 1874	94.46
15295	S. M. Carter, Carter's Mills, N. C	do	1870 and 1872	11.08
15296	T. C. Ellis, Cedar Grove, N. C	do	1873 and 1874	7.79
15297	Mary F. Murrow, Centre, N. C	do	1872 and 1874	5.36
15298	G. F. Shepherd, Cool Springs, N. C	do	1870 and 1872	54.46

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15110	Ira M. Slater, Triangle, N. Y	Compensation of postmasters readjusted, etc.	1867 and 1868	$16.81
15111	E. W. Simmons, Triangle, N. Y	do	1869 and 1870	17.49
	do	do	1872 and 1874	4.56
15112	Henry Hurt, Tribes Hill, N. Y	do	1871 and 1872	50.51
15113	George C. Blake, Troupsburgh, N. Y	do	1866 and 1868	74.50
15114	Augustus Martin, Trout River, N. Y	do	1868	15.49
15115	Moses Cowan, Trout River, N. Y	do	1872 and 1874	5.76
	do	do	1869 and 1870	46.48
15116	Chauncey P. Gregg, Trumansburgh Landing, N. Y.	do	1868 and 1869	6.69
15117	David Davenport, Trumansburgh Landing, N. Y.	do	1871 and 1872	5.05
15118	Peter J. Underhill, Tuckahoe, N. Y	do	1872 and 1873	67.06
	do	do	1870 and 1872	107.76
	do	do	1868 and 1870	78.34
15119	Thomas R. Earl, Turners, N. Y	do	do	104.33
	do	do	1870 and 1872	198.54
15120	Charles S. Ostrander, Turners, N. Y	do	1866 and 1868	56.68
	do	do	1868	14.90
15121	Amos Wamsley, Turnwood, N. Y	do	1872 and 1874	31.76
15122	M. N. Le Fevre, Tuthill, N. Y	do	1866 and 1867	5.95
15123	Peter Van Ness, Tyre, N. Y	do	1872 and 1873	10.60
15124	E. R. Bissell, Tyrone, N. Y	do	1868 and 1870	65.64
	do	do	1870 and 1872	29.50
	do	do	1868	1.51
15125	J. W. Arnold, Tyrone, N. Y	do	1866 and 1868	83.48
15126	W. H. Parker, Unadilla, N. Y	do	1866 and 1867	34.61
15127	Jonas H. Gregory, Unadilla Centre, N. Y.	do	1868 and 1870	3.24
15128	Jarvis C. Howard, Union Centre, N. Y.	do	1867 and 1868	12.61
	do	do	1870 and 1872	23.56
	do	do	1872 and 1873	10.65
15129	William H. Conger, Union Church, N. Y.	do	1866 and 1868	26.72
15130	John T. Duncan, Union Falls, N. Y	do	1870 and 1871	1.83
	do	do	1866 and 1868	19.58
15131	Frances E. Duncan, Union Falls, N. Y	do	1872 and 1874	3.34
	do	do	1871 and 1872	3.05
15132	R. M. Hamner, Union Grove, N. Y	do	1866 and 1868	20.52
15133	Ovio J. Pratt, Upper Lisle, N. Y	do	do	21.90
15134	John McGill, Upper Red Hook, N. Y	do	1868	13.94
15135	Norman C. Arnes, Upper Red Hook, N. Y.	do	1868 and 1870	69.50
15136	Melvin Earl, Vail's Mills, N. Y	do	1870 and 1872	15.92
15137	Ashby Morgan, Valcour, N. Y	do	1868 and 1869	10.16
15138	Jerome B. Sands, Valonia Springs, N. Y.	do	1867 and 1868	11.39
	do	do	1868 and 1870	12.50
	do	do	1870 and 1871	21.34
15139	Benjamin Post, Valonia Springs, N. Y	do	1866 and 1867	19.17
15140	Rufus Foster, Van Buren, N. Y	do	1868	6.03
	do	do	1870 and 1872	6.16
15141	Emeline Keller, Van Buren, N. Y	do	1866	6.03
15142	J. H. Shumway, Van Hornesville, N. Y	do	1866 and 1868	73.60
15143	Henry Dey, Varick, N. Y	do	1870 and 1872	18.52
	do	do	1872 and 1874	46.28
15144	O. T. Ellis, Varna, N. Y	do	1866 and 1868	69.62
15145	Alfred B. Thompson, Venice Center, N. Y.	do	do	25.52
	do	do	1868 and 1870	18.52
15146	Laverne N. Robinson, Vermillion, N. Y.	do	1866 and 1868	52.72
15147	William B. Forsyth, Vermillion, N. Y	do	1872 and 1874	15.59
15148	Ralph McIntosh, Vernon, N. Y	do	1868 and 1870	161.00
15149	Alson Norton, Vernon Centre, N. Y	do	1866 and 1868	62.52
15150	R. T. Wandle, Verplanck, N. Y	do	1870 and 1871	30.21
	do	do	1868 and 1870	97.28
15151	Clarence L. Blakeley, Verplanck, N. Y.	do	1871 and 1872	44.13
	do	do	1872	3.73
15152	DeForest N. Parker, Versailles, N. Y	do	1867 and 1868	26.66
	do	do	1872 and 1874	35.84
15153	Alphonso French, Vesper, N. Y	do	1870 and 1872	39.52
	do	do	1870	5.26
	do	do	1872 and 1874	14.14
15154	R. C. Arnold, Vesper, N. Y	do	1868 and 1869	15.91
	do	do	1866 and 1868	18.68
15155	E. A. Owen, Veteran, N. Y	do	1866	5.12
15156	Robert S. Atwell, Victory Mills, N. Y	do	1866 and 1868	54.78
15157	A. P. Cushman, Villanova, N. Y	do	1871 and 1872	8.17

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15158	Isaac Lane, Voak, N. Y	Compensation of postmasters readjusted, etc.	1871 and 1872	$7.21
	do	do	1872 and 1874	23.62
15159	R. G. Bassett, Volney, N. Y	do	1870 and 1872	15.72
	do	do	1872 and 1874	21.66
	do	do	1868 and 1870	29.34
15160	Mariette F. Bisbee, Volusia, N. Y	do	1866 and 1868	8.84
15161	Mrs. Mary J. Northrup, Waddington, N. Y.	do	1868	8.55
15162	Daniel F. Payne, Wadham's Mills, N. Y.	do	1870	1.42
	do	do	1870 and 1872	58.78
15163	W. H. Olmstead, Walesville, N. Y	do	1866 and 1867	26.85
15164	Jacob Walker, Walker Valley, N. Y	do	1866 and 1868	14.21
15165	William R. Head, Wallace, N. Y	do	1869	7.49
15166	Marcus A. Peck, Wallace, N. Y	do	1870 and 1872	26.28
	do	do	1870	7.49
15167	A. A. Wemple, Wampsville, N. Y	do	do	1.19
	do	do	1870 and 1872	27.14
15168	M. N. Dickinson, Warrensburgh, N. Y	do	1866 and 1868	160.22
15169	M. K. Lewis, Wassaic, N. Y	do	1872 and 1874	53.24
	do	do	1870 and 1872	36.68
15170	John Moss, Waterburgh, N. Y	do	1866 and 1868	14.92
15171	Ephraim C. Bently, Waterport, N. Y	do	do	80.36
15172	Edward M. Thompson, Watervale, N. Y.	do	1869 and 1870	4.20
	do	do	1872 and 1874	5.98
	do	do	1870 and 1872	19.44
15173	R. T. Reed, Watervale, N. Y	do	1868 and 1870	2.52
15174	Thomas K. Wilkinson, Waterville, N. Y.	do	1866 and 1868	148.14
15175	James Pearse, Watervleit Centre, N. Y	do	do	30.10
	do	do	1872 and 1870	36.22
15176	Joel H. Putnam, Wayne Centre, N. Y	do	1866	5.18
15177	James Kiernan, Weedsport, N. Y	do	1866 and 1868	156.26
15178	Charles C. Adams, Weedsport, N. Y	do	do	45.40
15179	Daniel Church, Wegatchie, N. Y	do	1869 and 1870	23.74
	do	do	1868	16.58
15180	William G. Fell, Wegatchie, N. Y	do	1870	3.96
15181	L. M. Phillips, Wellsville, N. Y	do	1867 and 1868	194.49
15182	Mason L. Herrick, Weltonville, N. Y	do	1868	1.22
	do	do	1870 and 1872	13.50
	do	do	1868 and 1870	8.40
15183	John Hodgson, Weverton, N. Y	do	1868 and 1869	13.43
	do	do	1866 and 1868	89.16
15184	Walter C. Knight, West Almond, N. Y	do	do	13.22
15185	Joseph Pero, West Amboy, N. Y	do	1872 and 1874	22.14
	do	do	1870 and 1872	79.24
15186	Andrew Hartshorn, West Batavia, N. Y.	do	1867 and 1868	6.12
	do	do	1868 and 1870	12.24
15187	C. M. Hendee, West Bloomfield, N. Y	do	1870 and 1872	69.98
	do	do	1867 and 1868	54.64
15188	Lewis Breese, West Burlington, N. Y	do	1872 and 1874	38.08
	do	do	1870 and 1872	22.30
	do	do	1868 and 1870	24.08
15189	George Doolittle, West Butler, N. Y	do	1866 and 1867	9.70
15190	Thomas W. McKee, West Camden, N. Y.	do	1872 and 1874	22.04
	do	do	1868 and 1870	45.98
	do	do	1868 and 1870	23.72
15191	John L. Pearse, West Charlton, N. Y	do	1866 and 1868	39.16
	do	do	1868 and 1870	42.50
	do	do	1872	7.91
15192	Judith M. Dodge, West Chazy, N. Y	do	1866 and 1868	73.66
15193	Isa Patchen, West Danby, N. Y	do	do	15.70
	do	do	1868 and 1870	18.56
	do	do	1872 and 1874	5.84
15194	John S. Colson, West Day, N. Y	do	1866 and 1867	26.49
15195	H. H. Primrose, West Dryden, N. Y	do	1866 and 1868	19.78
	do	do	1872 and 1874	10.94
15196	Leverett L. Hamilton, West Eaton, N. Y	do	1868 and 1870	39.28
15197	Farley Fisher, Westerloo, N. Y	do	1870 and 1871	19.89
	do	do	1866 and 1868	52.38
15198	Arson Fitch, West Exeter, N. Y	do	1868 and 1869	8.19
15199	Henry Bell, West Fayette, N. Y	do	1866 and 1868	13.68
15200	Rufus Farrington, West Fort Ann, N. Y.	do	do	30.58
15201	Edgar Akeley, West Fulton, N. Y	do	1870	4.12
	do	do	1872 and 1874	10.10
	do	do	1870 and 1872	13.54
15202	George Schermerhorn, West Fulton, N. Y	do	1868	2.61
	do	do	1868 and 1869	6.88
15203	Robert Miller, West Galway, N. Y	do	1866 and 1868	79.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15405	A. W. Vance, Amsterdam, Ohio	Compensation of postmasters readjusted, etc.	1868 and 1869	$15.20
15406	B. G. Foster, Amwell, Ohio	do	1866 and 1868	13.46
	do	do	1868 and 1870	5.34
15407	Benjamin Barton, Angola, Ohio	do	1866 and 1867	14.28
15408	A. N. Wilson, Ansonia, Ohio	do	1868 and 1870	31.58
	do	do	1870 and 1872	23.50
15409	G. P. Sanford, Apple Grove, Ohio	do	1868	4.49
15410	A. C. Nixon, Archer, Ohio	do	1866 and 1868	17.66
	do	do	1872 and 1874	4.84
	do	do	1868 and 1870	5.24
15411	William Parker, Ash Ridge, Ohio	do	1867 and 1868	44.52
	do	do	1868 and 1870	8.37
15412	Jacob Campbell, Ash Ridge, Ohio	do	1870	2.14
	do	do	1870 and 1872	30.52
	do	do	1872 and 1874	28.22
15413	Andrew Potts, Ash Ridge, Ohio	do	1866 and 1867	28.59
15414	J. Henry Blake, Athalia, Ohio	do	do	51.64
15415	John F. Mahon, Athens, Ohio	do	1866 and 1868	333.49
15416	D. Scott, Atlas, Ohio	do	1872 and 1874	13.58
15417	Jerome Hinckley, Auburn, Ohio	do	1868 and 1870	22.12
15418	Spencer L. Wadsworth, Auburn, Ohio	do	1872 and 1874	43.36
15419	John H. Fitch, Austintown, Ohio	do	do	38.24
15420	Samuel M. Conner, Ava, Ohio	do	1867	9.97
15421	A. W. Sherbondy, Avon Lake, Ohio	do	1866 and 1868	17.56
	do	do	1870 and 1871	2.41
15422	John W. Tate, Ayersville, Ohio	do	1866	12.66
15423	J. K. Myers, Ayersville, Ohio	do	1869 and 1870	17.80
15424	Isaac L. Ayers, Bachman, Ohio	do	1868 and 1870	11.34
	do	do	1866 and 1868	52.06
	do	do	1870 and 1872	9.36
15425	Augustus Ley, Bakersville, Ohio	do	1867 and 1868	42.72
15426	R. U. Chapman, Bakersville, Ohio	do	1866 and 1867	29.29
15427	Ephron P. Stewart, Bakersville, Ohio	do	1873 and 1874	35.61
15428	Joel J. Hausberger, Baltimore, Ohio	do	1866 and 1867	64.01
15429	William Stoneman, Barry, Ohio	do	1866 and 1868	6.72
	do	do	1870 and 1872	4.80
15430	W. H. Sloan, Bartramville, Ohio	do	1868 and 1870	17.96
	do	do	1866 and 1868	19.58
15431	Hiram Smith, Bashan, Ohio	do	1872 and 1874	13.16
15432	Joel J. Hausberger, Basil, Ohio	do	1867 and 1868	38.71
	do	do	1871	32.93
15433	Charles A. Seidler, Bays Bottom, Ohio	do	1870 and 1872	23.82
	do	do	1872 and 1873	7.43
15434	Jacob Hempleman, Beasley's Fork, Ohio.	do	1869 and 1870	5.19
	do	do	1870 and 1872	12.22
	do	do	1872 and 1874	6.04
15435	Peter Pickard, Beaver, Ohio	do	1871 and 1872	16.65
15436	J. J. Johnson, Beaver, Ohio	do	1869 and 1870	7.55
	do	do	1870 and 1871	13.35
15437	John W. Brown, Beaver Dam, Ohio	do	1871 and 1872	7.38
	do	do	1872	7.34
15438	N. M. Brown, Beaver Dam, Ohio	do	1873 and 1874	22.12
15439	S. W. Webster, Bell, Ohio	do	1874	4.50
15440	William Ramsey, Bell Centre, Ohio	do	1866 and 1868	166.32
	do	do	1870 and 1872	56.08
15441	Sylvester Geubb, Belle Point, Ohio	do	1868 and 1869	10.31
	do	do	1866 and 1868	31.69
15442	Josiah V. Stevenson, Belle Vernon, Ohio	do	1867 and 1868	44.15
	do	do	1870	1.94
15443	Rufus French, Bennett's Corners, Ohio	do	1869 and 1870	9.41
	do	do	1872 and 1874	15.68
15444	L. Starr, Bennington, Ohio	do	1870 and 1872	50.00
	do	do	1870	6.25
15445	John Rutter, Benton, Ohio	do	1866 and 1867	3.78
15446	Miss Elizabeth H. Hughes, Berlin Centre, Ohio.	do	1871 and 1872	7.20
15447	Charles Church, Berlin Station, Ohio	do	1866 and 1868	14.00
15448	L. W. Drake, Berlinville, Ohio	do	1869 and 1870	4.34
15449	Josephine Baxter, Berwick, Ohio	do	1866 and 1867	27.26
15450	Silas W. Bercaw, Berwick, Ohio	do	1867 and 1868	34.36
15451	G. M. Jones, Bethesda, Ohio	do	1868 and 1870	23.75
15452	Patrick Lockary, Bethesda, Ohio	do	1871 and 1872	16.00
15453	J. S. Feeney, Beulah, Ohio	do	1866	3.83
15454	James A. Bevis, Bevis, Ohio	do	1866 and 1868	26.32
	do	do	1872 and 1874	13.90
15455	Philo Palmitier, Birmingham, Ohio	do	1866 and 1867	22.07
15456	S. J. Alderman, Bishopville, Ohio	do	1872 and 1874	4.74

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15456	S. J. Alderman, Bishopville, Ohio	Compensation of postmasters readjusted, etc.	1871 and 1872	$3.57
15457	John Geizer, Black Jack, Ohio	do	1866 and 1868	2.72
	do	do	1872 and 1873	2.02
15458	Benard Elrich, Blackleysville, Ohio	do	1866 and 1868	12.36
15459	Henry Chapman, Black River, Ohio	do	1870 and 1872	10.07
15460	David L. Holton, Blendon, Ohio	do	1868	7.19
15461	William Smith, Bloomfield, Ohio	do	1872 and 1873	9.35
15462	M. W. Stewart, Bloomingburgh, Ohio	do	1870 and 1872	141.76
	do	do	1869 and 1870	12.91
	do	do	1872 and 1874	131.10
15463	Francis M. Hoover, Bloomington, Ohio	do	1873 and 1874	12.26
15464	John Turner, Bloomville, Ohio	do	1866 and 1867	37.16
15465	D. H. Woods, Blue Creek, Ohio	do	1868 and 1870	11.40
15466	Joseph Bingass, Bourneville, Ohio	do	1866 and 1867	54.87
15467	Abraham Summers, Bourneville, Ohio	do	1870 and 1872	32.66
	do	do	1867 and 1868	91.45
15468	T. C. M. Schindler, Bowlusville, Ohio	do	do	5.82
15469	James H. Coates, Brecksville, Ohio	do	1866 and 1868	30.82
	do	do	1872 and 1874	31.30
15470	S. G. Tudor, Bridgeville, Ohio	do	1866 and 1868	16.32
	do	do	1870 and 1872	7.88
	do	do	1872 and 1873	7.74
15471	Lucy Kelso, Brimfield, Ohio	do	1866 and 1868	50.72
	do	do	1870 and 1872	29.34
	do	do	1868 and 1870	14.38
	do	do	1872 and 1874	34.70
15472	Silvester Brinley, Brinley's Station, Ohio.	do	1868 and 1870	20.34
15473	Peleg Cranston, Broadway, Ohio	do	1870 and 1871	9.34
15474	S. W. Miller, Brock, Ohio	do	1866 and 1867	13.60
15475	J. J. Winbigler, Brock, Ohio	do	1870	2.00
15476	George L. Buckingham, Brownsville, Ohio.	do	1867 and 1868	53.31
15477	O. M. Hamilton, Brownsville, Ohio	do	1866	18.26
15478	Charles F. Clemmons, Brunersburgh, Ohio.	do	1868	2.77
	do	do	1872 and 1874	39.93
	do	do	1870 and 1872	14.62
15479	Daniel Brunner, Brunersburgh, Ohio	do	1868 and 1869	8.32
	do	do	1866 and 1868	71.14
15480	W. Wilson, Brunswick, Ohio	do	1866	8.65
15481	Charles A. Stow, Brunswick, Ohio	do	1873 and 1874	51.79
15482	George Moore, Buckeye City, Ohio	do	1867 and 1868	15.55
15483	G. W. Taylor, Buckeye City, Ohio	do	1866	5.19
15484	S. Hawley, Bucks, Ohio	do	1870 and 1872	11.54
	do	do	1867 and 1868	25.68
	do	do	1872 and 1874	16.06
15485	S. Naragon, Buena Vista, Ohio	do	1870 and 1872	6.48
	do	do	1868 and 1870	8.08
15486	Mary A. Miller, Buffalo, Ohio	do	1866 and 1867	8.09
15487	A. T. Moon, Buford, Ohio	do	1871 and 1872	14.35
15488	S. F. Kerns, Burbank, Ohio	do	1872 and 1873	19.68
	do	do	1870 and 1872	46.06
15489	S. R. Bush, Bush's Mill, Ohio	do	1871 and 1872	2.28
	do	do	1872 and 1874	29.88
15490	William Duvall, Businessburgh, Ohio	do	do	11.60
	do	do	1871 and 1872	16.53
15491	Mrs. Sallie E. Blackstone, Buttonville, Ohio.	do	1866 and 1868	77.00
	do	do	1870 and 1872	19.42
15492	William Moffitt, Byhalia, Ohio	do	do	12.15
15493	Jacob Holton, Byington, Ohio	do	1867 and 1868	11.57
15494	W. J. Smith, Cairo, Ohio	do	1866 and 1868	7.76
	do	do	1868 and 1870	9.34
	do	do	1870 and 1872	3.10
	do	do	1872 and 1874	2.82
15495	Jacob Carpenter, Calvary, Ohio	do	1868	3.36
	do	do	1868 and 1870	5.54
15496	B. B. Evans, Camba, Ohio	do	1870 and 1872	22.24
	do	do	1866 and 1868	67.74
	do	do	1872 and 1874	33.36
15497	Le Roy Kelly, Campbellstown, Ohio	do	1872	3.71
15498	John B. Crowley, Canal Lewisville, Ohio	do	1868 and 1870	22.46
	do	do	1870 and 1872	27.98
	do	do	1872	11.39
15499	David Gayman, Canal Winchester, Ohio	do	1866 and 1868	81.00
15500	Thomas G. Stradford, Canfield, Ohio	do	1866 and 1867	17.56
15501	Isaac E. Steinman, Cannonsburgh, Ohio	do	1868	6.13

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15502	J. M. Holfinger, Cannon's Mills, Ohio	Compensation of postmasters readjusted, etc.	1866 and 1867	$10.10
15503	H. C. Shaffer, Cannon's Mills, Ohio	do	1871 and 1872	7.91
15504	Michael Dorsey, Captina, Ohio	do	1868 and 1870	12.02
	do	do	1870 and 1872	32.30
	do	do	1866 and 1868	15.26
15505	Josiah McCormick, Carryall, Ohio	do	1872 and 1874	4.54
	do	do	1870 and 1872	4.54
	do	do	1866 and 1868	35.62
	do	do	1868 and 1870	6.24
15506	James Vickars, Cass, Ohio	do	1866 and 1867	3.90
15507	Reuben Hiskey, Casstown, Ohio	do	1869 and 1870	29.76
	do	do	1870 and 1872	77.64
15508	Robert A. Todd, Cassville, Ohio	do	1866 and 1868	7.76
	do	do	1872 and 1873	6.84
18509	Thomas Martin, Catawba, Ohio	do	1868 and 1870	34.34
	do	do	1866 and 1868	154.18
15510	S. P. Miller, Cedar Hill, Ohio	do	1872 and 1873	4.30
	do	do	1869 and 1870	5.66
15511	Philip Beal, Cedar Valley, Ohio	do	1870 and 1872	14.28
	do	do	1870	9.90
15512	John G. Winter, Cedarville, Ohio	do	1866 and 1867	72.87
15513	Daniel E. Bavis, Cedron, Ohio	do	1872 and 1873	3.55
15514	J. R. Richards, Cedron, Ohio	do	1866 and 1868	4.52
15515	Jacob Hight, Celina, Ohio	do	do	83.16
15516	W. G. Waitman, Centre, Ohio	do	1866	10.32
15517	Joseph Davis Centre Bend, Ohio	do	1870 and 1872	2.72
	do	do	1868 and 1870	10.60
	do	do	1866 and 1868	5.60
15518	George M. Ackerson, Centreburgh, Ohio.	do	1872 and 1874	10.74
	do	do	1867 and 1868	13.19
15519	Leonard R. Fornwald, Centreton, Ohio	do	1868 and 1870	47.14
	do	do	1868	15.39
15520	Jacob A. Fetters, Centre Valley, Ohio	do	1870 and 1872	53.38
15521	M. L. Dempsey, Chalfant, Ohio	do	1866 and 1867	22.62
15522	S. W. Kelley, Chambersburgh, Ohio	do	1869 and 1870	6.31
	do	do	1870 and 1872	48.51
15523	James Morford, Chatham, Ohio	do	1866 and 1868	31.56
15524	J. N. Brown, Cherry Fork, Ohio	do	do	104.12
15525	Alexander T. Biggs, Chester, Ohio	do	1871 and 1872	35.94
15526	John Howe, Chilo, Ohio	do	1866 and 1868	20.12
	do	do	1870 and 1872	31.40
	do	do	1868 and 1870	20.44
15527	C. P. Treat, Claridon, Ohio	do	1866 and 1868	49.64
15528	John C. Duff, Clarington, Ohio	do	1870	11.20
	do	do	do	5.26
15529	A. C. Pocock, Clark's, Ohio	do	1866	8.74
15530	George W. Jerauld, Clarksfield, Ohio	do	1866 and 1868	107.38
15531	Warren J. Baker, Clayton, Ohio	do	1872 and 1874	72.96
15532	John Lawrence, Clear Creek, Ohio	do	do	18.42
	do	do	1869 and 1870	13.86
15533	J. J. Barnett, Clear Creek, Ohio	do	1868	8.87
	do	do	1869	8.31
15534	L. Abbott, Clearport, Ohio	do	1870 and 1872	10.80
	do	do	1872 and 1874	14.14
15535	Thomas Archer, Cleves, Ohio	do	1866 and 1868	118.22
15536	George Cassady, Cleves, Ohio	do	1871 and 1872	35.17
15537	E. B. Lewis, Clifton, Ohio	do	1866 and 1868	96.64
	do	do	1872 and 1873	15.44
15538	Jacob Ecky, Clinton, Ohio	do	1870	8.82
	do	do	1870 and 1871	48.46
15539	James Thompson, Clinton Station, Ohio	do	1868	4.24
15540	Samuel H. Travillo, Clinton Valley, Ohio.	do	1870	2.42
	do	do	1870 and 1871	41.10
15541	Addison Baker, Clinton Valley, Ohio	do	1872	9.63
	do	do	do	5.50
15542	Susan F. Moon, Clintonville, Ohio	do	1868 and 1870	20.55
	do	do	1870 and 1872	11.22
15543	John Sherman, Clintonville, Ohio	do	1868	2.94
15544	H. W. Peters, Coal Grove, Ohio	do	1870 and 1871	8.73
15545	Andrew J. Coe, Coe Ridge, Ohio	do	1868 and 1870	18.94
	do	do	1870 and 1872	26.02
15546	Jerome Way, Colebrook, Ohio	do	1872	3.80
	do	do	1872 and 1874	70.84
15547	William A. Weidner, College Corner, Ohio.	do	1867 and 1868	15.26
	do	do	1872 and 1873	54.53

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15548	J. P. Meyers, Columbia, Ohio	Compensation of postmasters readjusted, etc.	1866 and 1868	$58.61
15549	W. T. Matthews, Columbia, Ohio	do	1866	11.77
15550	J. H. Rees, Columbia Centre, Ohio	do	1868	3.13
15551	Eli Harsh, Commercial Point, Ohio	do	1871 and 1872	11.39
	do	do	1872 and 1874	15.04
15552	Waymon Perfect, Condit, Ohio	do	1866 and 1867	9.37
15553	John W. Culver, Condit, Ohio	do	1870 and 1872	17.55
	do	do	1867 and 1868	15.61
	do	do	1868 and 1870	8.72
15554	Martha J. Culver, Condit, Ohio	do	1872	.33
15555	Royce Summerton, Congress, Ohio	do	1867 and 1868	25.51
	do	do	1870 and 1872	22.26
15556	D. C. Allen, Conneaut, Ohio	do	1866	107.26
15557	Lizzie M. Bailey, Constitution, Ohio	do	1872 and 1874	70.78
15558	William H. Lemon, Cranberry Prairie, Ohio.	do	1866 and 1868	9.86
	do	do	1868 and 1870	9.14
	do	do	1870 and 1871	1.92
15559	T. G. Moore, Croton, Ohio	do	1868	12.60
15560	S. B. Rigdon, Croxton, Ohio	do	1867 and 1868	7.37
	do	do	1868 and 1870	33.04
	do	do	1870 and 1872	23.72
	do	do	1872 and 1874	25.00
15561	D. W. Forsyth, Cumberland, Ohio	do	1869 and 1870	13.95
15562	Daniel F. Maddox, Dallas, Ohio	do	1866 and 1868	12.96
15563	John W. Spence, Dallasburgh, Ohio	do	do	16.96
	do	do	1868 and 1869	5.09
15564	John A. Fissell, Darbyville, Ohio	do	1870 and 1872	13.26
	do	do	1872 and 1874	22.56
15565	C. M. Sharp, Darke, Ohio	do	1866 and 1868	6.36
	do	do	1872 and 1874	9.06
15566	R. L. McKinney, Deersville, Ohio	do	1866 and 1867	55.00
15567	T. A. Mitchell, De Kalb, Ohio	do	1870 and 1872	12.66
	do	do	1868 and 1870	13.72
	do	do	1866 and 1868	18.82
15568	George Leonard, De La Palma, Ohio	do	1867 and 1868	8.25
15569	Jarett Parrish, Democracy, Ohio	do	1868 and 1870	36.62
	do	do	1868	3.21
	do	do	1872 and 1873	20.50
15570	Joseph McKeen, Demos, Ohio	do	1866 and 1868	41.62
15571	Newton Bowles, Dexter, Ohio	do	do	48.80
15572	David Longstreth, Dexter, Ohio	do	1870 and 1871	11.20
15573	William Michael, Dialton, Ohio	do	1872 and 1874	10.50
	do	do	1870 and 1872	18.12
15574	J. H. Coleman, Dilles Bottom, Ohio	do	1870 and 1872	15.34
15575	W. P. Dunlap, Dilles Bottom, Ohio	do	1866 and 1868	23.35
15576	F. W. Barber, Dodsonville, Ohio	do	1870 and 1872	13.21
15577	Mathias Winkleman, Dog Creek, Ohio	do	1872 and 1874	16.86
	do	do	1868 and 1870	17.50
15578	William Simons, Dorset, Ohio	do	1870	11.36
15579	Chester Chapin, Dorset, Ohio	do	1868 and 1869	17.04
15580	Thomas Eberly, Dublin, Ohio	do	1866 and 1868	90.04
15581	Shelton Dunbar, Dunbar, Ohio	do	do	16.00
	do	do	1870 and 1872	26.18
15582	Thomas Metz, Dunbarton, Ohio	do	do	13.48
15583	S. Iseminger, Dundas, Ohio	do	1866 and 1868	15.66
	do	do	1870 and 1872	13.82
	do	do	1872 and 1874	8.54
15584	G. W. Welltz, Dundee, Ohio	do	1872 and 1873	6.15
	do	do	1870 and 1872	46.20
15585	Jacob Janney, Dundee, Ohio	do	1866 and 1868	32.32
15586	J. T. Earnhart, Dunlevy, Ohio	do	do	29.78
15587	Eli Dimock, Dupont, Ohio	do	1868 and 1870	13.18
	do	do	1870 and 1872	29.84
	do	do	1872 and 1874	5.10
15588	D. F. Welsted, Durand, Ohio	do	1866	1.77
15589	J. B. Bartholomew, Eagleville, Ohio	do	1866 and 1867	17.37
15590	D. A. Crum, Eagleville, Ohio	do	1867 and 1868	17.37
15591	W. W. Morse, East Claridon, Ohio	do	1868 and 1870	41.05
15592	David Kiehl, East Greenville, Ohio	do	1872 and 1874	27.30
15593	F. E. James, East Liberty, Ohio	do	1868 and 1870	46.08
	do	do	1870 and 1872	35.54
	do	do	1866 and 1868	100.30
15594	John N. Taylor, East Liverpool, Ohio	do	do	226.50
15595	George F. Huffman, Easton, Ohio	do	do	36.99
15596	W. C. Chamberlin, East Palestine, Ohio	do	1871 and 1874	9.94
15597	Anson W. Tracy, East Plymouth, Ohio	do	1873 and 1874	10.17

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15598	Randall H. Seymour, East Plymouth, Ohio.	Compensation of postmasters readjusted, etc.	1869 and 1870	$17.33
	.....do	.....do	1870 and 1872	59.20
	.....do	.....do	1872 and 1873	6.10
15599	J. J. Mead, East Richland, Ohio	.....do	1867 and 1868	38.17
15600	Solomon H. Tobias, East Ringgold, Ohio.	.....do	1871 and 1872	6.03
15601	Francis Porter, East Springfield, Ohio	.....do	1866	7.54
15602	Sherman Keister, East Union, Ohio	.....do	1870 and 1872	18.46
	.....do	.....do	1872 and 1873	7.05
15603	Elijah Elliott, Elliott's Cross Roads, Ohio.	.....do	1870 and 1872	3.82
	.....do	.....do	1866 and 1868	26.54
	.....do	.....do	1868 and 1870	13.08
15604	Andrew McKinney, Ellsworth, Ohio	.....do	1866	9.91
15605	Sanford Burba, Emerald, Ohio	.....do	1866 and 1868	34.62
15606	W. L. Abbott, Emerald, Ohio	.....do	1872 and 1874	20.18
15607	Simeon Bunger, Euphemia, Ohio	.....do	1870	10.27
15608	John Cameron, Evansport, Ohio	.....do	1866 and 1868	64.76
15609	Andrew Edmiston, Ewington, Ohio	.....do	1866 and 1867	4.35
15610	J. C. Gross, Ewington, Ohio	.....do	1867 and 1868	2.61
15611	J. H. Koogler, Fairfield, Ohio	.....do	1870 and 1872	66.60
15612	John W. Scott, Fair Haven, Ohio	.....do	1872 and 1873	20.81
15613	Jeremiah T. McPherson, Fairview, Ohio	.....do	1868 and 1869	24.74
	.....do	.....do	1867 and 1868	78.36
15614	William W. Stanley, Fearing, Ohio	.....do	1866 and 1867	13.12
15615	Joseph Bowman, Fidelity, Ohio	.....do	1870 and 1872	48.04
15616	M. Fee, Felicity, Ohio	.....do	1866 and 1868	86.30
15617	Erwin C. Lyon, Fitchville, Ohio	.....do	1870 and 1872	61.74
15618	R. S. Mills, Fitchville, Ohio	.....do	1872 and 1874	32.13
15619	Ira Miller, Five Mile, Ohio	.....do	1866 and 1868	17.86
15620	H. B. Acker, Flat Rock, Ohio	.....do	1866	15.31
15621	Jacob Gump, Fletcher, Ohio	.....do	1866 and 1867	24.32
15622	Alfred W. Brobst, Florence, Ohio	.....do	1870 and 1871	38.88
	.....do	.....do	1866 and 1868	75.02
15623	Miss G. A. Purviance, Flushing, Ohio	.....do	1870 and 1872	32.89
	.....do	.....do	1872 and 1874	46.22
15624	William C. Hodges, Ford, Ohio	.....do	1872	10.28
	.....do	.....do	1870 and 1872	10.34
15625	Amos Bochman, Fort Jennings, Ohio	.....do	1866 and 1868	24.74
	.....do	.....do	1870 and 1872	6.18
15626	Theodore Scheid, Fort Recovery, Ohio	.....do	1866 and 1868	192.36
	.....do	.....do	1872 and 1874	76.82
15627	Darius Baldwin, Fowler, Ohio	.....do	.....do	30.44
15628	J. C. Frampton, Frampton, Ohio.	.....do	1868 and 1870	21.82
	.....do	.....do	1870 and 1872	23.30
	.....do	.....do	1872 and 1874	17.00
	.....do	.....do	1867 and 1868	34.52
15629	John Norris, Frazeysburgh, Ohio	.....do	1866	2.70
15630	Richard Griffee, Frazeysburgh, Ohio	.....do	1866 and 1868	43.18
15631	John Carson, Frederick, Ohio	.....do	1868 and 1870	4.44
	.....do	.....do	1870 and 1872	2.34
	.....do	.....do	1866 and 1868	7.58
15632	De Forest Wheelock, Freedom, Ohio	.....do	1866	11.63
15633	Noah Andregg, Fredonia, Ohio	.....do	1869	17.70
15634	Thomas Young, Gahanna, Ohio	.....do	1867 and 1868	15.39
	.....do	.....do	1872 and 1874	18.64
	.....do	.....do	1870 and 1872	19.52
15635	Martin S. Rochelle, Gahanna Ohio	.....do	1866	5.13
15636	James C. Patterson, Garden, Ohio	.....do	1868	3.33
	.....do	.....do	1868 and 1870	6.03
15637	George M. Yarnall, Gardner, Ohio	.....do	1870 and 1871	10.35
15638	G. W. Davis, Gates' Mills, Ohio	.....do	1872 and 1873	4.46
	.....do	.....do	1870 and 1872	12.20
15639	Samuel Ewing, Gavers, Ohio	.....do	1866 and 1868	18.14
15640	Orlando L. Mills, Genoa, Ohio	.....do	1868	30.74
	.....do	.....do	1870 and 1872	225.30
15641	William Scott, Georgesville, Ohio	.....do	1872	3.49
	.....do	.....do	1870 and 1872	6.62
15642	John A. Leas, German, Ohio	.....do	1870 and 1871	7.12
15643	G. W. Winiker, Gibson's Station, Ohio	.....do	1870 and 1872	15.95
	.....do	.....do	1866 and 1868	23.32
15644	Christian Besom, Ginghamsburgh, Ohio	.....do	1872 and 1874	8.72
	.....do	.....do	1870 and 1872	12.12
15645	Julius Armstrong, Glencoe, Ohio	.....do	1866 and 1868	59.04
15646	Mary Felger, Golden Corners, Ohio	.....do	1872 and 1874	7.22
	.....do	.....do	1870 and 1872	7.22
15647	John Fordyce, Gomer, Ohio	.....do	1866 and 1868	17.16
15648	Z. Harleman, Gordon, Ohio	.....do	1870	4.00

Estimate for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15649	Z. Harleman, Gordon, Ohio	Compensation of postmasters readjusted, etc.	1870 and 1872	$45.64
15649	O. S. Burt, Granger, Ohio	do	1870	$5.07
	do	do	1872 and 1874	63.44
	do	do	1870 and 1872	21.24
15650	D. J. Morey, Grant, Ohio	do	1872 and 1874	4.50
15651	J. H. Bowman, Gratis, Ohio	do	1870 and 1872	77.56
	do	do	1872 and 1874	45.00
	do	do	1866 and 1868	104.00
15652	D. S. Finney, Greensburgh Cross-Roads, Ohio.	do	do	37.06
15653	J. A. Stitzlein, Greersville, Ohio	do	do	12.02
15654	A. W. Greer, Greersville, Ohio	do	1872 and 1874	14.30
	do	do	1866	3.42
	do	do	1870 and 1872	29.70
15655	S. S. Bomberger, Greentown, Ohio	do	1866	12.70
15656	Hamilton Slade, Greenville, Ohio	do	1866 and 1867	322.71
15657	David Stredel, Groesbeck, Ohio	do	1866 and 1868	47.16
15658	Joseph Taylor, Groesbeck, Ohio	do	1872 and 1874	30.44
	do	do	1868 and 1870	22.04
	do	do	1866 and 1868	55.50
15659	T. B. Smith, Hall's Valley, Ohio	do	1870 and 1872	13.32
	do	do	1866 and 1868	8.26
	do	do	1872 and 1874	11.72
15660	Wm. Bell, Hamer, Ohio	do	1870 and 1872	14.76
	do	do	1872 and 1874	4.66
15661	Joseph Cottrell, Handy, Ohio	do	1868 and 1870	5.16
	do	do	1870 and 1872	9.34
	do	do	1866 and 1868	19.60
	do	do	1872 and 1874	5.98
15662	John W. Suter, Hannibal, Ohio	do	1873 and 1874	15.74
15663	A. M. Voegtly, Hannibal, Ohio	do	1868	11.56
	do	do	1868 and 1869	25.08
15664	Julia A. Harvey, Harlem Springs, Ohio	do	1868	5.66
15665	Sheridan Baker, Harlem Springs, Ohio	do	1868 and 1869	42.78
15666	Joseph Peterson, Harlem Springs, Ohio	do	1869 and 1870	45.94
	do	do	1870 and 1872	34.40
	do	do	1872 and 1874	30.48
15667	A. W. Warner, Harris, Ohio	do	1868 and 1869	16.27
	do	do	1866 and 1868	20.26
15668	W. B. Chenoweth, Harrisburgh, Ohio	do	1872 and 1874	82.98
	do	do	1869 and 1870	10.29
	do	do	1870 and 1872	42.84
15669	O. T. Curry, Harrisburgh, Ohio	do	1867 and 1868	61.21
	do	do	1868 and 1869	10.29
15670	R. B. Parks, Harrisburgh, Ohio	do	1866 and 1867	36.73
15671	Isaac H. Wheeler, Harrison Mills, Ohio	do	1866 and 1868	7.78
15672	George A. Patton, Harshasville, Ohio	do	1868 and 1870	26.16
	do	do	1872 and 1874	28.48
15673	Willis Humiston, Hartland, Ohio	do	1866 and 1868	13.42
15674	H. B. Thompson, Hartford, Ohio	do	1870 and 1872	41.34
15675	Franklin Machamer, Hartville, Ohio	do	1866 and 1867	13.29
15676	Hiram Madden, Harveysburgh, Ohio	do	1866 and 1868	104.34
15677	P. J. Fengles, Haskins, Ohio	do	1872 and 1874	38.41
15678	E. Binkley, Hasson, Ohio	do	1868	9.64
15679	S. W. Owen, Havana, Ohio	do	1866	18.84
15680	Hiram Spencer, Havana, Ohio	do	1870 and 1871	59.96
15681	O. C. Pierce, Haydenville, Ohio	do	1872 and 1874	27.68
15682	Joseph Schwartz, Hayesville, Ohio	do	1872 and 1873	28.32
15683	Oliver Miller, Helmick, Ohio	do	1872	7.68
	do	do	1872 and 1874	9.52
15684	J. P. Avrick, Hendrysburgh, Ohio	do	1866 and 1868	59.06
15685	Harvey G. Page, Henrietta, Ohio	do	1871 and 1872	6.64
15686	P. M. Hall, Herring, Ohio	do	1866 and 1867	66.02
15687	J. F. Moore, Highland, Ohio	do	1870 and 1872	80.94
	do	do	1867 and 1868	87.44
15688	J. S. Wright, Hilliards, Ohio	do	1866 and 1868	49.60
15689	W. R. Smith, Hillsborough, Ohio	do	do	346.26
15690	James Rea, Hill's Fork, Ohio	do	1872 and 1874	22.36
15691	J. C. Prentice, Hills House, Ohio	do	1870 and 1871	11.20
15692	Augustus F. Floyd, Hocking Furnace, Ohio.	do	1868 and 1869	18.48
	do	do	1867 and 1868	7.83
15693	Geo. W. Vanzant, Hollowtown, Ohio	do	1870 and 1872	7.68
	do	do	1872	1.74
15694	J. H. Burmer, Homer, Ohio	do	1872 and 1874	72.46
	do	do	1870 and 1872	49.56
15695	J. W. Goodrich, Hope, Ohio	do	1868 and 1870	27.48
	do	do	1872 and 1874	34.84

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15695	J. W. Goodrich, Hope, Ohio	Compensation of postmasters readjusted, etc.	1868	$10.56
15696	Thomas J. Mendenhall, Hooppole, Ohio	do	1868 and 1870	16.90
	do	do	1872 and 1874	4.56
	do	do	1870 and 1872	12.58
15697	James Phillips, Howland, Ohio	do	1868 and 1870	6.58
15698	Benonica R. Pierce, Hull's, Ohio	do	1870 and 1872	12.82
	do	do	1868	1.92
	do	do	1872 and 1874	14.76
15699	Windel Shutt, Hull's, Ohio	do	1867 and 1870	29.16
15700	James W. Cofland, Hunter, Ohio	do	1872	4.34
15701	Josiah Smith, Huntersville, Ohio	do	1870 and 1872	70.32
	do	do	1872 and 1874	74.98
15702	Josiah B. Lang, Huntington, Ohio	do	1866	2.94
15703	James Paxton, Iberia, Ohio	do	1867	24.24
15704	Franklin Allen, Islesborough, Ohio	do	1869 and 1870	10.27
15705	John Sharon, Indian Camp, Ohio	do	1867 and 1868	10.70
	do	do	1870 and 1872	6.00
15706	John Brown, Indian Camp, Ohio	do	1866	3.57
15707	John Hornsberger, Inland, Ohio	do	1866 and 1867	66.86
15708	John Hannum, Inverness, Ohio	do	1870 and 1872	14.50
	do	do	1872 and 1874	13.64
15709	Samuel Jackson, Iron Furnace, Ohio	do	1866	19.41
15710	Harrison McCully, Irwin, Ohio	do	1870 and 1872	12.67
15711	John Horn, Islesborough, Ohio	do	1867 and 1868	15.28
	do	do	1868 and 1869	4.26
15712	Henry Karn, Jacksonborough, Ohio	do	1871 and 1872	11.10
15713	Simon Shafer, Jacksonborough, Ohio	do	1868 and 1870	14.36
	do	do	1870 and 1871	8.33
15714	H. M. Stout, Jackson Centre, Ohio	do	1870 and 1872	10.90
15715	J. J. Oliver, Jaysville, Ohio	do	do	19.00
	do	do	1872 and 1874	12.94
15716	Jesse Tillman, Jaysville, Ohio	do	1866 and 1868	28.04
15717	James M. Cooper, Jeddo, Ohio	do	do	9.90
15718	A. B. Cummings, Jelloway, Ohio	do	1870	8.65
	do	do	1868 and 1870	37.14
15719	Mrs. Clara R. Cummings, Jelloway, Ohio	do	1870 and 1872	32.48
15720	R. B. Hana, Jeromeville, Ohio	do	1872	8.08
15721	Phillip Jolly, Jewett, Ohio	do	do	29.11
15722	Henry Heistand, Johnsville, Ohio	do	1870 and 1872	11.88
15723	H. D. Holcomb, Johnsonville, Ohio	do	1868 and 1870	31.02
	do	do	1867 and 1868	13.56
15724	William White, Jones' Corners, Ohio	do	1870 and 1872	14.38
	do	do	1866 and 1868	4.98
15725	John E. Vose, Joy, Ohio	do	1872 and 1874	37.80
	do	do	1871 and 1872	5.09
15726	William B. Finlay, Keene, Ohio	do	1868	5.10
	do	do	1872 and 1874	39.38
	do	do	1870 and 1872	32.70
15727	Angus Beil, Keith's, Ohio	do	1872 and 1874	9.46
15728	Thomas H. Linnell, Kepton, Ohio	do	1869 and 1870	27.19
	do	do	1870 and 1872	48.60
15729	Alexander Mecay, Kilbourne, Ohio	do	do	35.80
	do	do	1872 and 1874	29.90
	do	do	1866 and 1868	56.08
15730	Josiah Scott, Kilgore, Ohio	do	1868 and 1870	11.52
	do	do	1866 and 1868	42.14
15731	Julia E. Rogers, Laceyville, Ohio	do	do	12.14
	do	do	1868	8.72
15732	W. W. Martin, La Fayette, Ohio	do	1866 and 1868	18.90
15733	Wesley Crismore, Lake Fork, Ohio	do	1871 and 1872	10.07
15734	Samuel M. Rufan, Lamartine, Ohio	do	1868	9.90
15735	H. S. Reed, Latham, Ohio	do	1866	9.27
15736	Gideon S. Coover, Lattas, Ohio	do	1869 and 1870	4.00
	do	do	1870 and 1871	12.10
15737	E. Mowbray, Lattas, Ohio	do	1868	3.43
	do	do	1867 and 1868	12.85
15738	Allen Switzer, Lattas, Ohio	do	1866	4.28
15739	William C. Baker, Lattasburgh, Ohio	do	1870 and 1872	28.50
15740	W. W. Morris, Layman, Ohio	do	1866 and 1868	13.10
	do	do	1870 and 1872	16.58
15741	J. H. Hamilton, Lecompton, Ohio	do	1866 and 1868	27.69
15742	John Schaeffer, Leesville Cross Roads, Ohio.	do	1871 and 1872	36.16
	do	do	1872	1.34
15743	William S. Rhodes, Leslie, Ohio	do	1870 and 1872	5.40
15744	Jno. N. Hayman, Letart Falls, Ohio	do	1866 and 1868	37.56
15745	L. T. Kautz, Levanna, Ohio	do	1870 and 1872	28.22
	do	do	1872 and 1874	44.38

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15746	Lewis Gillilan, Levi, Ohio	Compensation of postmasters readjusted, etc.	1866 and 1868	$9.06
15747	Sarah Johnson, Lewisburgh, Ohio	do	1872	7.33
	do	do	1872 and 1874	127.16
15748	D. W. Jones, Lewis Centre, Ohio	do	1866 and 1867	34.60
15749	Peter Weller, Liberty Corners, Ohio	do	1868 and 1870	18.10
	do	do	1872 and 1874	17.16
15750	Silas C. Householder, Linton, Ohio	do	1866 and 1868	29.42
	do	do	1868 and 1870	17.58
15751	D. C. Harris, Linnville, Ohio	do	1866 and 1868	39.94
	do	do	1868 and 1869	12.70
15752	J. M. Blackwood, Lithopolis, Ohio	do	1874	6.04
15753	S. C. Prichard, Liverpool, Ohio	do	1866 and 1877	25.84
15754	Henry Pierce, Liverpool, Ohio	do	1869 and 1870	26.80
	do	do	1872 and 1873	112.69
	do	do	1870 and 1872	138.50
15755	A. P. Felton, Locust Corners, Ohio	do	1869 and 1870	6.17
15756	James A. Murphy, Locust Grove, Ohio	do	1870 and 1872	28.34
15757	G. Sporlider, Logan, Ohio	do	1866 and 1868	274.74
15758	Henry Young, Logansville, Ohio	do	1872 and 1874	21.12
	do	do	1868 and 1870	17.56
	do	do	1870 and 1872	24.98
15759	Ira L. Falls, Log Cabin, Ohio	do	1873 and 1874	15.09
15760	William F. Hodges, Log Cabin, Ohio	do	1866 and 1867	16.02
15761	Henry Chapman, Lorain, Ohio	do	1872	10.07
15762	R. A. Richardson, Loramies, Ohio	do	1869 and 1870	12.84
15763	J. M. Gore, Lovetts, Ohio	do	1870 and 1872	7.76
15764	Philip Mattern, Lowell, Ohio	do	do	134.94
	do	do	1868	39.83
15765	Henry Sheets, Lower Newport, Ohio	do	1866 and 1868	6.16
	do	do	1868 and 1870	9.94
	do	do	1870 and 1872	12.08
	do	do	1872 and 1874	3.46
15766	Rees Thomas, Lower Salem, Ohio	do	1868 and 1870	28.21
15767	B. G. Warwick, Lucasville, Ohio	do	1872	2.12
	do	do	1870 and 1872	16.08
15768	J. M. Richey, Lykens, Ohio	do	1866 and 1867	11.96
15769	Josiah Hall, Lynchburgh, Ohio	do	1866 and 1868	128.12
15770	Charles E. Carmon, Lyons, Ohio	do	do	42.58
15771	Samuel Jackson, Mabers, Ohio	do	1871 and 1872	13.35
15772	Vinton McCoy, Mabers, Ohio	do	1866 and 1868	41.72
15773	Job S. Taylor, Madison, Ohio	do	1866 and 1867	18.21
15774	Samuel Peters, Madisonburg, Ohio	do	1870	7.87
15775	William H. Greer, Magnolia, Ohio	do	1866 and 1868	53.48
15776	Loyd McBee, Malta, Ohio	do	1872 and 1874	80.27
15777	William L. Vance, Manchester, Ohio	do	1866 and 1867	72.02
15778	John F. Hill, Marathon, Ohio	do	1868 and 1870	53.92
	do	do	1868	12.76
15779	James S. Fox, Marblehead, Ohio	do	1866 and 1868	11.84
15780	David Brobst, Marcy, Ohio	do	1872 and 1874	30.48
	do	do	1866 and 1868	17.60
	do	do	1870 and 1872	13.94
15781	Hester S. Kerr, Martinsburgh, Ohio	do	1872 and 1874	37.00
	do	do	1870 and 1872	49.40
15782	W. H. Simmons, Masterton, Ohio	do	1868	41.28
	do	do	1868 and 1869	6.30
15783	Chas. A. Seidler, Masterton, Ohio	do	1867 and 1868	82.56
15784	Fred. K. Ashburgh, Masterton, Ohio	do	1866	41.28
15785	J. B. Larenier, Maxville, Ohio	do	1871 and 1872	29.83
15786	Benj. M. Rudisill, Maxville, Ohio	do	1873 and 1874	18.37
15787	Owen O'Hara, Maxville, Ohio	do	1872 and 1873	39.52
15788	J. A. Cutler, Mayfield, Ohio	do	1866 and 1867	6.56
15789	S. S. McClure, Mayhill, Ohio	do	1866	3.65
15790	C. W. Cromwell, McConnellsville, Ohio	do	1869 and 1870	172.59
15791	James McGonigle, McGonigle, Ohio	do	1868 and 1870	12.84
	do	do	1870 and 1872	20.16
	do	do	1872 and 1874	26.80
15792	Milton Newkirk, McZena, Ohio	do	1870 and 1872	11.00
	do	do	1872 and 1874	22.90
15793	Elizabeth Van Pelt, Melmore, Ohio	do	1870 and 1873	44.62
15794	W. S. Beaty, Mendon, Ohio	do	1866 and 1868	55.52
15795	Michael Adams, Mercer, Ohio	do	1872 and 1873	8.51
	do	do	1870 and 1872	22.44
15796	H. C. Nicley, Mercerville, Ohio	do	1872 and 1874	7.62
	do	do	1867 and 1868	28.12
15797	Calvin R. Gilbert, Metamora, Ohio	do	1870 and 1872	47.60
	do	do	1872 and 1873	16.39
15798	Henry Bolton, Miamisburgh, Ohio	do	1872 and 1874	184.08
	do	do	1870 and 1872	136.68

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15799	John Bloomfield, Middle Branch, Ohio	Compensation of postmasters readjusted, etc.	1872 and 1873	$1.43
	do	do	1868 and 1870	4.24
	do	do	1870 and 1872	4.40
15800	Henry Thompson, Middlefield, Ohio	do	1868 and 1870	21.52
	do	do	1866 and 1868	81.10
15801	Alfred English, Middle Fork, Ohio	do	1867 and 1868	11.78
15802	W. L. Everett, Middle Fork, Ohio	do	1866 and 1867	17.23
15803	Geo. R. Gaston, Milan, Ohio	do	1869 and 1870	115.18
	do	do	1872 and 1873	150.56
15804	James C. Rice, Milfordton, Ohio	do	1872 and 1874	28.61
15805	G. R. Disney, Milfordton, Ohio	do	1868 and 1870	7.92
	do	do	1872	1.26
15806	O. U. Woodward, Millidale, Ohio	do	1866	6.36
15807	W. M. Dearth, Mill Grove, Ohio	do	1872 and 1874	16.84
	do	do	1867 and 1868	11.22
	do	do	1870 and 1872	13.34
15808	Chas. M. Cool, Millersport, Ohio	do	1867 and 1868	15.14
15809	R. V. Daugherty, Minerville, Ohio	do	do	23.09
	do	do	1870 and 1872	47.98
	do	do	1872 and 1874	38.58
15810	Robert Hill, Millville, Ohio	do	1866 and 1868	75.86
15811	G. W. Chapman, Milo, Ohio	do	1870 and 1872	7.40
	do	do	1868 and 1870	11.28
15812	Byington Salisbury, Mineral Springs, Ohio.	do	1872 and 1874	43.02
15813	Wm. Roettger, Minster, Ohio	do	1869 and 1870	105.80
15814	R. V. Roll, Monroe, Ohio	do	1866 and 1868	68.48
	do	do	1870 and 1872	47.50
15815	H. F. Hitchcock, Monroe Centre, Ohio	do	1867 and 1868	6.88
	do	do	1870 and 1872	33.90
15816	Mrs. Sarah E. Carney, Montgomery, Ohio.	do	do	27.22
	do	do	1872 and 1874	28.80
	do	do	1868 and 1870	38.00
15817	Joel D. Kriebel, Montpelier, Ohio	do	1871	6.23
15818	John Iseman, Montra, Ohio	do	do	37.96
	do	do	1868 and 1870	20.94
15819	Albert Beach, Montrose, Ohio	do	1871 and 1872	3.94
15820	A. L. Snider, Moons, Ohio	do	1870 and 1872	5.46
	do	do	1868 and 1870	27.00
	do	do	1866 and 1868	10.49
15821	Robert George, Moon's Salt Works, Ohio.	do	1866 and 1867	21.03
15822	John Anderson, Morgantown, Ohio	do	1866 and 1868	4.52
15823	Henry Miller, Moulton, Ohio.	do	do	9.58
15824	William H. Townsend, Mount Blanco, Ohio.	do	1868 and 1870	4.90
	do	do	1866 and 1868	13.34
15825	Abner Ustick, Mount Gilead, Ohio	do	1867 and 1868	146.02
15826	W. G. Hoover, Mount Hope, Ohio	do	1868 and 1870	12.74
	do	do	1870 and 1872	11.56
15827	Daniel Veatch, Mount Liberty, Ohio	do	1866	3.15
15828	M. S. Burdsal, Mount Pisgah, Ohio	do	1868	11.84
15829	R. W. Chambers, Mount Pleasant, Ohio.	do	1866 and 1868	187.04
15830	John Simkins, Mount Repose, Ohio	do	1870 and 1872	22.24
15831	J. T. Crawford, Mountsville, Ohio	do	1868	5.34
	do	do	1868 and 1870	21.50
	do	do	1870	1.46
15832	W. B. Dunham, Mount Washington, Ohio.	do	1866 and 1868	48.06
15833	John Funk, Mowrystown, Ohio	do	1870 and 1872	22.60
15834	E. O. Lyman, Mulberry Corners, Ohio	do	1867 and 1868	16.58
15835	C. C. Shaw, Mulberry Corners, Ohio	do	1866	5.52
15836	John Lafferty, Mutual, Ohio	do	1872 and 1874	46.74
	do	do	1871 and 1872	17.40
15837	J. B. Rickey, Nairn, Ohio	do	1872 and 1874	6.34
	do	do	1872	4.60
15838	Valentine Greenwald, Nankin, Ohio	do	1870 and 1872	58.46
15839	John P. Steutz, Nankin, Ohio	do	1866 and 1868	35.18
15840	William S. Erb, Navarre, Ohio	do	1866 and 1867	34.78
15841	Charles Bates, Nettle Lake, Ohio	do	1870 and 1872	15.06
	do	do	1872 and 1874	23.64
15842	William H. Harrison, jr., New Alexander, Ohio.	do	1871 and 1872	16.65
15843	Henry G. Cartwright, New Burlington, Ohio.	do	1868 and 1870	11.16
	do	do	1870 and 1872	93.40
	do	do	1872 and 1873	29.04

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15844	Richard S. Holl, New Castle, Ohio	Compensation of postmasters readjusted, etc.	1870 and 1872	$22.19
15845	Christian Schaffer, New Chambersburgh, Ohio.	do	1868	21.32
15846	T. H. Baird, New Cumberland, Ohio	do	1867 and 1868	24.31
15847	David Shuler, New Dover, Ohio	do	1866 and 1867	39.77
	do	do	1870 and 1872	16.22
	do	do	1872 and 1874	19.64
15848	F. H. Thornhill, New Guilford, Ohio	do	1868 and 1870	11.88
	do	do	1870 and 1872	13.36
	do	do	1872	4.27
15849	John Moore, New Hagerstown, Ohio	do	1870 and 1871	12.09
15850	F. M. Patton, New Hope, Ohio	do	1870 and 1872	12.94
	do	do	1872 and 1874	12.24
15851	W. S. Whorton, New Hope, Ohio	do	1866 and 1867	37.41
15852	Henry C. Fudge, New Jasper, Ohio	do	1868 and 1870	9.90
	do	do	1870 and 1872	10.12
15853	Henry Cook, New Knoxville, Ohio	do	1866 and 1868	55.96
	do	do	1868 and 1870	23.28
	do	do	1870 and 1872	40.50
	do	do	1872 and 1874	37.92
15854	Levi Kilburn, New London, Ohio	do	1870 and 1872	109.75
15855	Elmer W. Welsheimer, New Martinsburgh, Ohio.	do	1868	5.71
15856	G. W. Barnitz, New Paris, Ohio	do	1866 and 1867	93.95
15857	S. W. Creed, New Petersburgh, Ohio	do	1868 and 1870	16.62
15858	David R. Pratt, New Petersburgh, Ohio	do	1870	2.39
	do	do	1870 and 1872	17.86
15859	H. O. Hardin, New Plymouth, Ohio	do	1867 and 1868	28.41
	do	do	1868 and 1870	11.52
	do	do	1870	21.55
15860	J. W. Poland, New Plymouth, Ohio	do	1871	43.10
15861	James L. Reckard, Newport, Ohio	do	1868	5.44
	do	do	do	43.78
15862	George B. Wiseman, New Salem, Ohio	do	1866 and 1868	38.12
	do	do	1872	5.71
15863	Joseph Esterly, New Springfield, Ohio	do	1867 and 1868	11.78
15864	John Wigton, Newville, Ohio	do	1867 and 1868	28.92
	do	do	1868 and 1869	6.22
15865	John Baker, New Waterford, Ohio	do	1866 and 1868	44.32
15866	J. R. Barber, New Way, Ohio	do	1870 and 1872	59.88
	do	do	1872 and 1874	19.26
15867	Oscar E. Brownell, Nimisila, Ohio	do	1866 and 1868	64.00
15868	W. H. Marsh, Nimisila, Ohio	do	1870 and 1872	29.12
15869	P. S. Smithhisla, Nonpareil, Ohio	do	1871 and 1872	5.37
15870	Mark Green, Nonpareil, Ohio	do	1866	15.45
	do	do	1870 and 1871	5.37
15871	Thos. Moncrieff, North Berne, Ohio	do	1871 and 1872	13.17
15872	Henry Stutzman, North Berne, Ohio	do	1866 and 1868	22.68
	do	do	1870 and 1871	17.56
15873	Sam'l Kinnear, North Columbus, Ohio	do	1866 and 1867	12.54
15874	Calvin Phinney, North Dover, Ohio	do	1866 and 1868	5.94
15875	A. J. Hockett, North Hampton, Ohio	do	1866	5.60
15876	Jesse R. Hockett, North Hampton, Ohio	do	1873 and 1874	11.04
15877	G. W. Shaffer, North Jackson, Ohio	do	1868 and 1870	20.84
	do	do	1872 and 1874	40.30
	do	do	1866 and 1868	77.54
15878	Sam'l Rau, North Lima, Ohio	do	1870 and 1872	37.66
	do	do	1872 and 1873	13.91
	do	do	1867 and 1868	17.68
15879	Henry Buzard, North Lima, Ohio	do	1873 and 1874	19.25
15880	Geo. Buzard, North Lima, Ohio	do	1866	5.83
15881	Anson L. Rogers, North Madison, Ohio	do	1871 and 1872	59.74
	do	do	1872	13.79
15882	Eli P. Smith, North Ridgeville, Ohio	do	1871 and 1872	25.80
15883	M. S. Billings, North Royalton, Ohio	do	1873 and 1874	10.30
	do	do	1871 and 1872	18.77
15884	Jas. F. Wintersmith, Norton, Ohio	do	1872 and 1874	17.26
	do	do	1866 and 1868	83.22
15885	Thos. G. Young, Norton Centre, Ohio	do	do	84.64
	do	do	1868 and 1870	27.98
	do	do	1870 and 1872	8.06
15886	T. A. Decker, Norwich, Ohio	do	1866 and 1867	37.11
15887	Reuben D. Keplinger, Nora, Ohio	do	1871 and 1872	47.58
15888	Isaac Roberts, Ogden, Ohio	do	1870 and 1872	30.12
	do	do	1872 and 1873	15.88
15889	D. S. Osborn, Ogden, Ohio	do	1866 and 1867	48.59
15890	Milton A. Palmer, Ohlstown, Ohio	do	do	20.65
15891	J. P. Reed, Ohlstown, Ohio	do	1863	7.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15891	J. P. Reed, Ohlstown, Ohio	Compensation of postmasters readjusted, etc.	1868	$6.65
15892	Jas. E. Scofield, Okolona, Ohio	do	1870 and 1872	15.52
	do	do	1868 and 1870	18.10
15893	Wm. N. Marsh, Old Hickory, Ohio	do	1870 and 1872	19.20
	do	do	1872	4.39
	do	do	1866 and 1868	17.56
15894	Geo. W. Stetson, Olena, Ohio	do	1870 and 1872	43.06
	do	do	1872 and 1873	14.80
15895	James Caldwell, Olive Green, Ohio	do	1870 and 1872	10.54
	do	do	1868 and 1870	8.74
	do	do	1872 and 1874	4.28
15896	Joshua Pennell, Orange Station, Ohio	do	1866 and 1867	23.61
15897	Thomas Slattery, Orange Station, Ohio	do	1868	3.93
15898	Geo. W. Dewees, Osnaburgh, Ohio	do	1866	6.88
	do	do	1872 and 1874	23.12
15899	Le Roy Decker, Ostrander, Ohio	do	1870 and 1872	87.02
15900	G. W. Highbargin, Outville, Ohio	do	1871 and 1872	16.56
15901	David Hedley, Ovid, Ohio	do	1866 and 1868	6.32
	do	do	1868 and 1870	4.96
	do	do	1870 and 1872	7.00
	do	do	1872 and 1873	3.38
15902	D. P. Beaton, Oxford, Ohio	do	1872 and 1874	325.72
15903	James Park, Park Mill, Ohio	do	1870 and 1872	8.06
	do	do	1868 and 1870	3.48
15904	Lorenzo D. Carter, Patriot, Ohio	do	1866	15.82
15905	John E. Hughes, Patriot, Ohio	do	1868 and 1870	11.66
	do	do	1870 and 1871	4.46
15906	Mary L. Wheeler, Pagetown, Ohio	do	1873	4.52
15907	James Wheeler, Pagetown, Ohio	do	1870 and 1872	65.98
	do	do	1868 and 1870	49.74
	do	do	1872 and 1873	6.77
15908	Ezra Rose, Palmyra, Ohio	do	1866 and 1868	28.73
15909	B. F. Thomas, Pancoastburg, Ohio	do	do	28.52
	do	do	1868	2.48
15910	R. C. Fiester, Paoli, Ohio	do	1869 and 1870	14.31
	do	do	1872 and 1874	7.76
	do	do	1870 and 1872	9.66
15911	Samuel McMackin, Paris, Ohio	do	1873 and 1874	9.77
15912	Brainerd Selby, Parisville, Ohio	do	1866 and 1868	36.82
	do	do	1872 and 1874	9.86
	do	do	1870 and 1872	13.54
15913	Samuel Wiltsie, Payne, Ohio	do	do	8.00
	do	do	1872 and 1873	1.57
15914	E. M. Pence, Pence's Mills, Ohio	do	1870 and 1872	5.16
15915	Thomas Penrose, Pennsville, Ohio	do	1866 and 1868	83.26
	do	do	1870 and 1872	36.90
	do	do	1872 and 1874	36.02
15916	L. P. Zimmerman, Perryville, Ohio	do	1874	26.59
15917	B. W. Walsh, Pharisburgh, Ohio	do	1866 and 1868	63.06
	do	do	1870	10.08
15918	A. B. Hodson, Philanthropy, Ohio	do	1871 and 1872	4.62
	do	do	1872 and 1874	26.08
15919	George B. Howard, Philo, Ohio	do	1868 and 1869	10.97
15920	Obadiah Williams, Pickrelltown, Ohio	do	1866 and 1867	25.60
15921	J. Valentine, Pilcher, Ohio	do	1870 and 1872	8.20
	do	do	1872 and 1874	6.36
15922	A. Fillmore, Pine Grove, Ohio	do	1866 and 1868	228.78
	do	do	1868 and 1869	10.71
15923	Willard F. Kelsey, Pioneer, Ohio	do	1866 and 1868	111.65
15924	Ebenezer P. Converse, Pioneer, Ohio	do	1868	16.44
15925	C. H. Kingsbury, Pittsfield, Ohio	do	1870 and 1872	74.78
15926	Abraham Baker, Plain, Ohio	do	1866 and 1867	22.84
15927	Jonathan Wiggins, Plainfield, Ohio	do	do	50.51
15928	Thomas J. Cook, Plainfield, Ohio	do	1868 and 1869	26.23
15929	Elsen Paden, Plants, Ohio	do	1872 and 1874	17.00
	do	do	1870 and 1872	7.90
	do	do	1868 and 1870	7.90
15930	R. Edgerton, Plantsville, Ohio	do	1870 and 1872	11.92
	do	do	1872 and 1874	17.30
15931	S. H. Jackson, Plattsville, Ohio	do	1867 and 1868	10.03
	do	do	1868 and 1869	7.96
15932	Conrad Lamerson, Pleasant Corner, Ohio	do	1871 and 1872	7.53
	do	do	1872 and 1874	5.70
15933	Vinton Alderman, Pleasant Valley, Ohio	do	1866 and 1868	115.46
	do	do	1868	1.71
15934	James Johnson, Pleasant Run, Ohio	do	1870 and 1872	76.40
15935	Philip Hane, Pleasantville, Ohio	do	1866 and 1868	53.22
	do	do	1870 and 1872	31.32

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount
15935	Philip Hane, Pleasantville, Ohio	Compensation of postmasters readjusted, etc.	1872 and 1874	$26.76
15936	J. L. Deyannan, Plimpton, Ohio	do	1866 and 1868	123.18
	do	do	1872 and 1874	42.00
	do	do	1868 and 1870	67.28
15937	John Cooper, Point Pleasant, Ohio	do	1870 and 1872	13.10
	do	do	1872 and 1874	14.36
15938	John Henry, Pond, Ohio	do	1866 and 1867	6.49
15939	E. O. Ellis, Pontiac, Ohio	do	do	7.51
15940	A. B. Stewart, Poplar, Ohio	do	1869 and 1870	16.48
	do	do	1870 and 1871	25.03
15941	Daniel Grover, Poplar Ridge, Ohio	do	1868 and 1869	1.39
15942	William H. Tennent, Poplar Ridge, Ohio	do	1872 and 1874	6.14
15943	Joseph Johnson, Portage Centre, Ohio	do	1866 and 1868	3.90
	do	do	1870 and 1872	11.04
15944	A. L. Hale, Port Homer, Ohio	do	1871 and 1872	29.39
15945	Edward Calvin, Princetown, Ohio	do	1868 and 1869	14.93
15946	Seth F. Robinson, Pulaski, Ohio	do	1866 and 1867	26.88
15947	Josiah Smith, Pulaski, Ohio	do	1867 and 1868	69.20
	do	do	1868 and 1870	11.98
15948	Joseph H. De Witt, Rainsborough, Ohio	do	1866 and 1868	66.88
	do	do	1868 and 1869	22.89
15949	Nathan Froth, Rainsborough, Ohio	do	1872	9.22
	do	do	1871 and 1872	48.71
15950	James P. Garrett, Rainsborough Ohio	do	1869	7.63
15951	Solomon Thompson, Rarden, Ohio	do	1867	12.39
15952	E. B. Randall, Rav's, Ohio	do	1866 and 1867	18.84
15953	J. P. Mooney, Red Oak, Ohio	do	1871 and 1872	25.50
	do	do	1872 and 1873	13.54
15954	David Thomas, Reedsburgh, Ohio	do	1866 and 1868	78.16
	do	do	1868 and 1869	6.00
15955	Barney Sims, Reedsville, Ohio	do	1872 and 1873	8.45
	do	do	1870 and 1872	8.80
	do	do	1867 and 1868	11.70
15956	N. S Hoyt, Reedsville, Ohio	do	1866 and 1867	7.02
15957	John Koehler, Rehoboth, Ohio	do	1866 and 1868	43.82
	do	do	1868 and 1870	17.34
	do	do	1871	5.37
15958	Lyle Tate, Reid's, Ohio	do	1868 and 1870	27.52
	do	do	1870 and 1872	8.32
15959	Samuel Gray, Relley, Ohio	do	do	49.34
	do	do	1872 and 1874	32.62
15960	William C. Smiley, Remersville, Ohio	do	1872	5.06
	do	do	1872 and 1874	11.36
15961	Mrs. M. A. Mettler, Republic, Ohio	do	1866 and 1868	144.66
15962	Enoch G. Stevenson, Ridgeland, Ohio	do	do	21.40
	do	do	1870 and 1872	8.24
15963	Thomas Baubell, River Styx, Ohio	do	1866	16.87
15964	Samuel Gloyd, Rives, Ohio	do	1866 and 1867	23.38
15965	George W. Pellow, Robertsville, Ohio	do	1871 and 1872	28.10
	do	do	1872 and 1873	24.11
15966	W. McFarlin, Rock House, Ohio	do	1866 and 1868	5.50
	do	do	1872	8.96
15967	Abraham Anderson, Rockby, Ohio	do	1866 and 1868	33.42
15968	George W. Green, Rootstown, Ohio	do	1872 and 1874	28.90
	do	do	1868 and 1870	75.00
	do	do	1868	5.47
15969	Nelson Converse, Rootstown, Ohio	do	1866 and 1868	38.26
15970	Henry Kirby, Rosseau, Ohio	do	1872 and 1874	16.80
15971	George Suppes, Round Bottom, Ohio	do	1866 and 1868	8.22
	do	do	1868 and 1869	3.33
15972	John Tye, Round Bottom, Ohio	do	1869 and 1870	5.56
15973	William M. Neville, Round Head, Ohio	do	1868	3.96
15974	John Van Nest, Rows, Ohio	do	1874	3.64
15975	J. J. Montgomery, Roxbury, Ohio	do	1866 and 1868	92.36
15976	H. M. Hicks, Rural, Ohio	do	1868 and 1869	12.60
	do	do	1866 and 1867	16.15
15977	T. B. Loyd, Rural, Ohio	do	1867 and 1868	17.83
15978	A. P. Russell, Russell's Place, Ohio	do	1871 and 1872	7.77
	do	do	1872 and 1874	12.50
15979	Mrs. M. Guthrie, Sago, Ohio	do	do	45.00
	do	do	1868 and 1870	23.86
15980	Robert Guthrie, Sago, Ohio	do	1866 and 1868	31.20
15981	Patrick Redmond, St. Joseph's College, Ohio.	do	1868 and 1870	27.32
	do	do	1870 and 1872	21.54
15982	Calvin Belt, Saint Louisville, Ohio	do	1866 and 1868	32.74
15983	L. C. Sawyer, Saint Mary's, Ohio	do	1868 and 1869	41.20
15984	James Lowery, Salesville, Ohio	do	1871 and 1872	42.72

Estimates for the payment of claims—Continued.

No of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
15985	Herbert Marchand, Saltillo, Ohio	Compensation of postmasters readjusted, etc.	1866 and 1868	$2.28
	do	do	1868 and 1870	3.48
15986	John H. Clark, Sand Fork, Ohio	do	1870 and 1872	5.06
15987	Wesley M. Tracy, Sandyville, Ohio	do	do	47.32
	do	do	1872 and 1874	23.62
15988	Stephen Felke, Sardinia, Ohio	do	1866 and 1868	61.40
	do	do	1872 and 1874	5.06
15989	J. A. Myers, Savannah, Ohio	do	1866	35.25
15990	Joseph McCutchins, Savannah, Ohio	do	1866 and 1867	42.95
15991	Samuel Wheeler, Saxon, Ohio	do	1868 and 1870	5.23
15992	Benjamin R. Harness, Schooly's Station, Ohio.	do	1870 and 1872	31.20
15993	A. H. Clawson, Sciotoville, Ohio	do	1866 and 1867	18.54
15994	John Myers, Scotch Ridge, Ohio	do	1871 and 1872	5.56
15995	L. L. Loomis, Scotch Ridge, Ohio	do	1872	1.48
15996	Isaac Olinger, Sego, Ohio	do	1867 and 1868	5.41
15997	C. C. Morton, Selma, Ohio	do	1868	16.58
15998	Wilson Scott, Senecaville, Ohio	do	1866 and 1868	69.00
	do	do	1868 and 1870	70.56
	do	do	1870 and 1872	32.16
15999	Hiram G. Witham, Shade, Ohio	do	1869 and 1870	6.61
	do	do	1870 and 1872	24.36
	do	do	1872 and 1874	5.62
16000	Gurdon L. Horr, Shalersville, Ohio	do	1868 and 1870	34.88
	do	do	1866 and 1868	83.78
16001	Joel F. Moore, Shane's Crossing, Ohio	do	1866	19.24
16002	Gabriel Lankert, Shane's Crossing, Ohio	do	1870 and 1872	44.82
16003	Samuel Carr, Sharon Centre, Ohio	do	1867 and 1868	60.21
	do	do	1870 and 1872	45.66
16004	J. H. Barron, Sharon Centre, Ohio	do	1866 and 1867	71.17
16005	James R. Wright, Sheffield, Ohio	do	1868 and 1869	4.68
16006	Jonathan T. Morris, Shenandoah, Ohio	do	1870 and 1872	10.32
16007	George F. Cline, Shenandoah, Ohio	do	1866 and 1867	16.73
16008	George Patterson, Shepherdstown, Ohio	do	1868	.54
	do	do	1868 and 1869	3.48
16009	James R. Peregoy, Shepherdstown	do	1869 and 1870	5.80
16010	J. P. Young, Sheridan Coal Works, Ohio.	do	1872 and 1874	8.56
16011	Lindley Lamb, Short Creek, Ohio	do	1866 and 1868	48.60
16012	Lemuel B. Lamb, Short Creek, Ohio	do	1872 and 1874	52.94
16013	Albert Richardson, Shreve, Ohio	do	1866 and 1868	54.12
16014	John Shockey, Sicily, Ohio	do	1866	4.17
16015	Mathew C. Hale, Sidney, Ohio	do	1866 and 1867	60.62
16016	George Murray, Sidney, Ohio	do	1866	39.09
16017	Margaret Walker, Sidney, Ohio	do	1867 and 1868	155.11
16018	J. B. Watson, Smithfield, Ohio	do	1866 and 1867	44.70
16019	E. C. Parmelee, Solon, Ohio	do	1866 and 1868	59.92
16020	Aaron Mattox, South Bloomingville, Ohio.	do	1868	23.43
	do	do	do	2.18
16021	A. G. Jones, South Bloomfield, Ohio	do	1870 and 1872	31.88
16022	Laban R. Haskins, Southington, Ohio	do	1868 and 1869	6.28
16023	William Tiffany, South Kirtland, Ohio	do	1870 and 1872	79.18
	do	do	1872 and 1874	80.40
16024	Ruel Butler, South Kirtland, Ohio	do	1866 and 1868	25.02
16025	Lewis Wagner, South Perry, Ohio	do	1870 and 1872	13.54
	do	do	1872 and 1873	9.03
16026	A. Soupene, South Point, Ohio	do	1869 and 1870	14.39
16027	William O. Shaughnessey, South Point, Ohio.	do	1871 and 1872	5.85
	do	do	1872 and 1874	29.42
16028	Judson A. Sheldon, Sparta, Ohio	do	1866 and 1868	195.66
16029	L. A. Lewis, Spencer, Ohio	do	1868	6.92
16030	A. E. Kilborn, Spencer, Ohio	do	1870 and 1872	45.59
	do	do	1872 and 1873	20.11
16031	J. W. Richard, Spring Mountain, Ohio	do	1866 and 1868	71.52
16032	L. Shepley, Stafford, Ohio	do	do	107.24
	do	do	1868 and 1870	12.22
	do	do	1870 and 1872	24.04
16033	C. W. Athey, Stanleyville, Ohio	do	1871 and 1872	35.94
	do	do	1872 and 1874	7.84
16034	John Cline, Steambury, Ohio	do	1870 and 1872	17.06
	do	do	1872 and 1873	11.04
16035	Jacob Ungemack, Stovertown, Ohio	do	1866	9.69
16036	Harvey Supplee, Straitsville, Ohio	do	1868 and 1869	7.94
	do	do	1866 and 1868	64.06
16037	John F. Harbaugh, Straitsville, Ohio	do	1870	2.44
	do	do	1869 and 1870	18.23

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16038	Mary E. Ayres, Strasburgh, Ohio	Compensation of postmasters readjusted, etc.	1866 and 1868	$16.28
16039	W. C. Crites, Stringtown, Ohio	do	1870 and 1872	11.22
	do	do	1872 and 1874	10.88
16040	F. J. Cregue, Suffield, Ohio	do	1869 and 1870	4.48
16041	Andrew McCleary, Sugar Tree, Ohio	do	1870 and 1872	6.64
	do	do	1872 and 1874	5.26
16042	J. V. Cluxton, Sugar Tree Ridge, Ohio	do	1867 and 1868	31.87
16043	S. N. Hetherington, Sugar Tree Ridge, Ohio.	do	1868	3.85
	do	do	1870 and 1872	19.96
	do	do	1872	5.20
16044	John H. Philpot, Summerfield, Ohio	do	1872 and 1874	66.64
16045	Andrew J. Clingan, Summerford, Ohio	do	1867 and 1868	35.41
	do	do	1868 and 1870	10.40
	do	do	1870	3.49
16046	S. D. Sain, Swan, Ohio	do	1872 and 1874	30.26
16047	James H. Guthrie, Swan Creek, Ohio	do	1866 and 1868	22.80
	do	do	1868 and 1869	28.98
16048	Corydon I. Bush, Swan Creek, Ohio	do	1870	8.27
	do	do	1870 and 1872	30.54
	do	do	1872 and 1874	31.52
16049	S. W. Markley, Sweet Wine, Ohio	do	1868	2.56
	do	do	1872	6.48
	do	do	1870 and 1872	32.14
16050	A. N. Gibbs, Sycamore, Ohio	do	1871 and 1872	14.35
16051	W. F. Dewey, Sylvania, Ohio	do	1866 and 1868	222.10
16052	J. H. Mesler, Symmes' Corners, Ohio	do	1869 and 1870	32.05
16053	Eli Clapp, Tampico, Ohio	do	1866 and 1868	18.06
16054	Wm. H. Hast, Tappan, Ohio	do	1866 and 1867	4.61
16055	J. J. Fierbaugh, Tappan, Ohio	do	1868 and 1870	27.40
	do	do	1870 and 1871	19.22
16056	Thos. J. Proctor, Tawawa, Ohio	do	1866 and 1867	7.18
16057	David Taylor, jr., Taylor's Station, Ohio	do	1868 and 1869	9.88
16058	Jefferson Johnson, Taylorsville, Ohio	do	1872 and 1874	5.14
16059	F. M. Atkinson, Temperanceville, Ohio	do	1866 and 1867	12.55
16060	S. C. Hoag, Texas, Ohio	do	1866 and 1868	85.86
16061	Hugh Plymale, Thivener, Ohio	do	1872 and 1874	7.16
	do	do	1868 and 1870	4.12
	do	do	1866 and 1868	50.18
16062	C. M. Stoltz, Thornville, Ohio	do	1869 and 1870	38.80
	do	do	1870 and 1872	37.96
16063	Wm. Fristoe, Three Locusts, Ohio	do	1867 and 1868	6.85
	do	do	1868 and 1870	16.56
16064	John Hipp, Timberville, Ohio	do	1870 and 1872	10.58
	do	do	1872 and 1874	8.68
16065	Wm. Dunlap, Tippecanoe, Ohio	do	1866 and 1867	10.95
16066	Wm. W. Perdue, Tippecanoe, Ohio	do	1868 and 1869	6.51
16067	E. Daugherty, Tiro, Ohio	do	1866 and 1868	29.30
16068	E. S. Hallett, Torch, Ohio	do	1868 and 1869	3.60
16069	John T. Matthews, Townsend, Ohio	do	1867 and 1868	35.12
16070	Moses W. Drake, Trenton, Ohio	do	1866 and 1868	74.14
	do	do	1870 and 1872	38.40
	do	do	1872 and 1873	21.17
16071	J. Eicher, Trenton, Ohio	do	1873 and 1874	20.63
16072	Geo. W. Bull, Troy, Ohio	do	1866	45.84
16073	Saml McKee, Troy, Ohio	do	1866 and 1867	86.90
16074	B. F. Mouser, Underwood, Ohio	do	1866	5.21
16075	John Allison, Union Plains, Ohio	do	1866 and 1868	8.38
	do	do	1867 and 1870	3.84
	do	do	1872 and 1874	6.32
16076	John Dunfee, Unionville Centre, Ohio	do	1873	21.46
16077	Joseph Taylor, Uniopolis, Ohio	do	1870 and 1872	30.60
	do	do	1869 and 1870	7.04
16078	Silas Frasier, Uniopolis, Ohio	do	1868	3.83
	do	do	1868 and 1869	7.05
16079	R. C. Layton, Uniopolis, Ohio	do	1866 and 1867	8.21
16080	R. F. Toby, Upshur, Ohio	do	1870 and 1872	17.74
16081	Ella M. Hembor, Utica, Ohio	do	1872 and 1874	171.64
16082	B. F. Vail, Vail's Cross Roads, Ohio	do	1866 and 1868	48.66
16083	D. Allbaugh, Vanatta, Ohio	do	1872	1.68
	do	do	1872 and 1874	11.72
16084	Nelson Vanatta, Vanatta, Ohio	do	1868	3.70
16085	Ephraim C. Wells, Van Buren, Ohio	do	1863 and 1869	10.71
	do	do	1867 and 1868	72.10
16086	C. F. Knorr, Van's Valley, Ohio	do	1871 and 1872	2.18
	do	do	1872 and 1874	5.78
16087	T. G. Watkins, Vaughnsville, Ohio	do	1866 and 1867	35.34
16088	Chester Reed, Vernon, Ohio	do	1866 and 1868	27.76

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16088	Chester Reed, Vernon, Ohio	Compensation of postmasters readjusted, etc.	1872 and 1874	$14.04
16089	G. W. Hollis, Versailles, Ohio	do	1866 and 1868	179.44
16090	Garry A. Treat, Vienna, Ohio	do	do	91.70
	do	do	1872	12.15
16091	Hiram Dubois, Vigo, Ohio	do	1866	7.19
16092	T. D. Bean, Vigo, Ohio	do	1868 and 1869	11.71
16093	Marquis L. Wade, Vineyard Hill, Ohio	do	1870 and 1872	14.40
16094	W. W. Ellison, Waggoner's Ripple, Ohio.	do	1866 and 1868	44.30
	do	do	1872 and 1874	4.98
	do	do	1870 and 1872	5.58
16095	H. L. Vanatta, Wagram, Ohio	do	1870 and 1871	10.14
16096	George W. Cooper, Wakatomica, Ohio	do	1867 and 1868	4.19
	do	do	1870 and 1872	20.84
	do	do	1872 and 1874	8.60
16097	Daniel D. Smith, Waldo, Ohio	do	1870 and 1872	16.58
	do	do	1872 and 1874	21.05
16098	William P. Davis, Wales, Ohio	do	1870 and 1872	18.02
	do	do	1872	1.61
	do	do	1867 and 1868	25.28
16099	David Rodehaver, Walhonding, Ohio	do	1871 and 1872	10.17
	do	do	1872 and 1874	17.16
16100	Jacob A. Mast, Walnut Creek, Ohio	do	1868	2.01
	do	do	1870 and 1872	16.85
	do	do	1868 and 1870	19.18
16101	Robert McMurray, Wapakoneta, Ohio	do	1866 and 1878	142.36
16102	William Warnock, Warnock, Ohio	do	1870 and 1872	23.74
	do	do	1874	50.82
16103	David E. Patterson, Washington, Ohio	do	1866 and 1868	132.63
	do	do	1868 and 1869	30.60
16104	George A. Bering, Webertown, Ohio	do	1870 and 1872	15.34
	do	do	1872 and 1874	5.32
16105	Martin Clark, Wellerville, Ohio	do	1870 and 1872	8.44
	do	do	1866 and 1868	18.28
16106	L. P. Scott, Welshfield, Ohio	do	1866	9.75
16107	Joseph H. Gage, Wesley, Ohio	do	1868 and 1870	4.86
	do	do	1866 and 1868	3.90
16108	John Bowers, West Alexander, Ohio	do	do	70.76
16109	John P. Krum, West Andover, Ohio	do	1869 and 1870	17.99
16110	Samuel Arnold, West Baltimore, Ohio	do	1866 and 1868	40.42
16111	Amos Taft, West Barre, Ohio	do	1868 and 1870	29.08
	do	do	1870 and 1872	20.64
16112	Adeline Harrison, West Bedford, Ohio	do	1868	17.35
16113	Lewis Hackett, Westborough, Ohio	do	1866 and 1868	117.10
16114	Sarah White, West Carlisle, Ohio	do	do	42.43
16115	T. W. Thompson, West Carlisle, Ohio	do	1872	12.39
	do	do	1871 and 1872	23.48
16116	James S. Jeffers, West Chester, Ohio	do	do	19.43
	do	do	1872 and 1874	84.91
16117	James W. Lawhead, West Independence	do	1867 and 1868	46.77
	do	do	1868 and 1869	6.65
16118	Jacob C. Hazen, West Independence, Ohio.	do	1870 and 1871	11.67
16119	Jacob Ruch, West Independence, Ohio	do	1871 and 1872	29.19
16120	John McCullough, West Jefferson, Ohio	do	1870 and 1872	87.77
16121	Robert Beall, West Lafayette, Ohio	do	1872 and 1874	22.64
16122	John Hoak, West Lebanon, Ohio	do	1868	8.66
16123	Wesley King, West Manchester, Ohio	do	1866 and 1868	25.14
16124	G. A. Peirce, West Milton, Ohio	do	do	138.00
16125	William G. Patterson, West Point, Ohio	do	1868 and 1869	9.41
	do	do	1868	7.59
16126	Hezekiah Bennett, West Point, Ohio	do	1866 and 1867	9.27
16127	H. Nismonger, West Sonora, Ohio	do	1872 and 1873	9.85
16128	M. A. Vaughn, West View, Ohio	do	1866 and 1868	9.92
16129	Daniel Dugan, West Zanesville, Ohio	do	do	51.92
16130	John A. Potter, Weymouth, Ohio	do	do	30.00
16131	M. L. Stray, Wickliffe, Ohio	do	1871 and 1872	8.64
	do	do	1872 and 1874	23.10
16132	William Dudgeon, Wilkins' Run, Ohio	do	1870	13.16
	do	do	1868 and 1870	7.42
	do	do	1872 and 1874	10.76
16133	P. O. Hughes, Williams Centre, Ohio	do	1866 and 1868	115.42
	do	do	1870 and 1872	46.08
16134	A. B. Leonard, Williamsfield, Ohio	do	1866 and 1868	60.14
16135	C. W. Simmons, Willow Wood, Ohio	do	1866 and 1867	20.74
16136	William Holchaw, Willow Wood, Ohio	do	1871 and 1872	2.45
	do	do	1872 and 1874	13.58
16137	D. G. Cooper, Will's Creek, Ohio	do	1870 and 1872	20.20

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16138	William M. Haller, Wilseyville, Ohio	Compensation of postmasters readjusted, etc.	1870 and 1872	$11.04
	do	do	1872 and 1874	16.02
16139	Simeon Brown, Winchester, Ohio	do	1866 and 1868	85.60
16140	G. F. Rawdon, Windsor, Ohio	do	1868	16.69
	do	do	1868 and 1870	36.70
	do	do	1870 and 1872	32.86
16141	E. E. Hazen, Woodland, Ohio	do	1873 and 1874	17.93
16142	N. E. Sinclair, Woodfield, Ohio	do	1867 and 1868	86.16
16143	Hiram Pierson, Wood's Station, Ohio	do	1872 and 1874	8.30
	do	do	1866 and 1868	28.56
16144	Robert B. Livering, Wood View, Ohio	do	1870 and 1872	27.12
	do	do	1870	4.84
16145	Adam A. Lucas, Wood View, Ohio	do	1868 and 1869	14.53
16146	Andrew Nuhfer, Woodsville, Ohio	do	1870 and 1872	53.80
16147	George Taylor, Worthington, Ohio	do	1866 and 1867	64.71
16148	Lafayette Thatcher, Yankee Ridge, Ohio.	do	1871 and 1872	3.63
16149	P. H. Hisey, Yelverton, Ohio	do	1866 and 1868	11.10
16150	William H. Storms, York, Ohio	do	1868 and 1870	8.35
	do	do	1870 and 1872	17.26
	do	do	1872 and 1874	10.73
16151	John W. Blair, Youngsville, Ohio	do	1871 and 1872	12.78
	do	do	1872 and 1874	22.76
16152	Daniel Derr, Zimmermanville, Ohio	do	1868	2.33
16153	W. W. Brown, Amity, Oregon	do	1870 and 1872	14.19
16154	James A. Wilson, Applegate, Oregon	do	1866 and 1868	4.92
	do	do	1868	.97
16155	A. D. Helman, Ashland, Oregon	do	1870 and 1872	62.84
16156	Thomas Smith, Auburn, Oregon	do	1868 and 1870	121.52
16157	F. Keil, Aurora Mills, Oregon	do	1870 and 1871	7.90
16158	F. Giesy, Aurora Mills, Oregon	do	1871 and 1872	13.16
16159	William W. Beach, Buena Vista, Oregon.	do	1870 and 1872	29.50
16160	A. F. Miller, Chetco, Oregon	do	1866 and 1868	3.54
16161	Joel Dickson, Clear Creek, Oregon	do	1871 and 1872	5.52
16162	Caleb A. Thornburg, Camp Watson, Oregon.	do	1872 and 1874	21.24
16163	P. W. Johnson, Eugene City, Oregon	do	1866 and 1868	270.96
16164	H. Eccleston, Franklin, Oregon	do	1870 and 1872	22.28
	do	do	1872 and 1873	12.41
16165	J. F. Clarke, Gardiner, Oregon	do	1872	2.75
16166	Hiram Smith, Harrisburgh, Oregon	do	1870 and 1872	89.86
16167	J. R. Boyce, Hillsborough, Oregon	do	1866	2.73
16168	L. Patterson, Hillsborough, Oregon	do	1866 and 1868	19.11
	do	do	1868 and 1870	61.26
16169	Henry C. Coe, Wood River, Oregon	do	1869 and 1870	4.74
16170	Isaac Vanduyn, Independence, Oregon	do	1870 and 1872	24.59
16171	W. L. Hodgin, Independence, Oregon	do	1871 and 1872	18.44
	do	do	1872 and 1874	36.00
16172	James M. Sutton, Jacksonville, Oregon	do	1868 and 1870	207.90
	do	do	1870	36.45
16173	Max Muller, Jacksonville, Oregon	do	1871 and 1872	218.67
16174	R. L. Simpson, La Fayette, Oregon	do	1866 and 1868	17.04
16175	S. H. Claughton, Lebanon, Oregon	do	1872 and 1874	88.94
16176	J. H. McGrew, Lincoln, Oregon	do	1870 and 1872	6.42
16177	H. V. V. Johnson, McMinnville, Oregon.	do	1872 and 1874	150.58
16178	J. V. B. Butler, Monmouth, Oregon	do	1866 and 1867	10.74
16179	Warren Waterhouse, Monmouth, Oregon	do	1870 and 1872	24.98
	do	do	1872 and 1874	105.42
16180	Hans Weaver, Myrtle Creek, Oregon	do	1871 and 1872	14.67
16181	Jesse Moreland, Needy, Oregon	do	1866 and 1868	11.40
16182	F. M. Lamb, Nestocton, Oregon	do	1870 and 1872	15.33
	do	do	1872 and 1874	37.04
16183	John M. Payne, North Yam Hill, Oregon	do	1870 and 1872	17.88
16184	E. D. Fondray, Phœnix, Oregon	do	1870 and 1871	8.28
16185	A. Pershbaker, Randolph, Oregon	do	1872 and 1874	9.84
16186	E. E. Wheeler, Scio, Oregon	do	1866 and 1868	54.48
16187	G. S. Hinsdale, Scottsburgh, Oregon	do	1870 and 1872	22.30
	do	do	1872 and 1874	45.02
16188	Joel B. Morris, Sheridan, Oregon	do	1871 and 1872	7.85
16189	Robert A. Crossan, Silverton, Oregon	do	1870 and 1872	36.90
16190	C. R. Comstock, Springville, Oregon	do	1872	3.84
16191	Hadley Hobson, Sublimity, Oregon	do	1868 and 1870	8.38
	do	do	1870	3.24
16192	James H. Koontz, Umatilla, Oregon	do	1868	13.44
	do	do	1873 and 1874	101.94
16193	Norman Simon Hubbell, Union, Oregon	do	1870 and 1871	12.02
16194	A. B. McIlvain, Waldo, Oregon	do	1866 and 1868	74.42
	do	do	1868 and 1870	11.92

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16194	A. B. McIlvain, Waldo, Oregon	Compensation of postmasters readjusted, etc.	1870 and 1872	$32.94
16195	E. H. Stahl, Abbottstown, Pa	do	1867 and 1868	82.40
	do	do	1869 and 1870	68.24
	do	do	1871 and 1872	51.22
16196	J. L. Paxton, Abington, Pa	do	1866 and 1867	8.76
16197	John J. Shelmire, Abington, Pa	do	1868	2.19
	do	do	1868 and 1869	20.82
16198	William Jones, Adamsburgh, Pa	do	1869 and 1870	21.63
	do	do	1871 and 1872	20.54
16199	Ann B. Kreider, Adamsburgh, Pa	do	1868 and 1869	12.98
	do	do	1867 and 1868	43.86
16200	Hugh R. Stewart, Adamsville, Pa	do	do	39.98
16201	Moses A. Ross, Addison, Pa	do	1872 and 1874	129.36
16202	William Getz, Albrightsville, Pa	do	1866 and 1868	8.32
16203	Henry J. Alden, Aldenville, Pa	do	1870 and 1872	27.16
	do	do	1872 and 1874	42.20
16204	E. B. Percival, Allegany Bridge, Pa	do	1868 and 1870	11.80
16205	Henry Alleman, Alleman's, Pa	do	1870 and 1872	43.90
	do	do	1872 and 1874	14.16
16206	David L. Deviny, Allen, Pa	do	1866 and 1868	51.66
	do	do	1868 and 1870	28.74
	do	do	1872 and 1874	38.10
	do	do	1870 and 1872	28.16
16207	Rebecca Bostaph, Alum Rock, Pa	do	1866 and 1868	9.34
16208	J. D. Vogan, Anandale, Pa	do	1867 and 1868	19.11
16209	Bella I. McCoy, Anandale, Pa	do	1870 and 1872	8.74
16210	James Johnson, Andalusia, Pa	do	1867 and 1868	15.75
16211	Joseph B. Garber, Andersonburgh, Pa	do	1868	9.17
16212	Lewis Snyder, Apple Grove, Pa	do	1866	2.14
16213	William B. Norris, Apple Grove, Pa	do	1869	.85
16214	Stephen Boyer, Aquashicola, Pa	do	1866 and 1868	12.64
	do	do	1868 and 1870	6.68
16215	Jacob Ritter, Archbald, Pa	do	1868 and 1869	69.47
16216	Michael M. Gilroy, Archbald, Pa	do	1869 and 1870	81.95
16217	John A. Crawford, Arch Spring, Pa	do	1870 and 1872	12.80
	do	do	1872 and 1874	13.24
16218	James R. Cameron, Arnot, Pa	do	1870 and 1872	64.56
16219	E. L. Diefendufer, Ashley, Pa	do	1869 and 1870	39.70
16220	J. O. Randall, Aspinwall, Pa	do	1872 and 1874	7.26
	do	do	1868 and 1869	20.52
16221	John Glasgow, Atkinson's Mills, Pa	do	1868	3.04
	do	do	1870 and 1872	35.32
	do	do	1872 and 1874	11.62
16222	Charles L. Tewksbury, Auburn Centre, Pa.	do	1871 and 1872	2.90
	do	do	1872 and 1874	11.38
16223	Mary E. Lazarus, Audenried, Pa	do	1866 and 1868	214.82
16224	Margaret Ellis, Bainbridge, Pa	do	1869 and 1870	50.41
16225	L. Lenhart, Bakersville, Pa	do	do	3.62
	do	do	1870 and 1872	16.22
16226	W. C. Adams, Baldwin, Pa	do	1866 and 1868	74.52
	do	do	1870	12.72
16227	John T. Kirkpatrick, Bernard's, Pa	do	1866 and 1868	27.72
	do	do	1870 and 1872	7.84
	do	do	1872 and 1874	7.14
16228	C. M. Billman, Barry, Pa	do	1866 and 1868	46.41
	do	do	1870 and 1872	37.80
16229	Rufus Kistler, Bartonsville, Pa	do	do	5.70
	do	do	1872 and 1874	13.96
16230	Charles Otenweller, Bastress, Pa	do	1866 and 1868	3.58
	do	do	1868 and 1870	7.70
16231	W. G. Driesbach, Beach Haven, Pa	do	1870 and 1872	119.66
	do	do	1870	11.25
	do	do	1866 and 1868	100.16
	do	do	1868	8.02
16232	Thomas Hill, Beallsville, Pa	do	do	12.91
	do	do	1868 and 1869	43.84
16233	John Evart, Beallsville, Pa	do	1866 and 1868	74.11
16234	Thomas L. McKeen, Bear Creek, Pa	do	1868 and 1870	31.10
16235	B. L. Raudenbush, Beaver Springs, Pa	do	1866	11.34
16236	Franklin L. Sherman, Beaver Valley, Pa	do	1868 and 1869	22.66
16237	Jacob E. Bauman, Bechtelsville, Pa	do	1872 and 1874	25.12
16238	Collin Loyer, Bedford, Pa	do	1866 and 1868	299.68
16239	Christian Fretz, Bedminster, Pa	do	1870	.17
16240	Christian Bolinger, Beech Creek, Pa	do	1866 and 1868	95.32
16241	C. R. Keyes, Beech Creek, Pa	do	1874	21.32
16242	George Fehr, Belfast, Pa	do	1873	19.38
16243	J. McManus, Belle Valley, Pa	do	1872 and 1874	12.14

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16243	J. McManus, Belle Valley, Pa	Compensation of postmasters readjusted, etc.	1870 and 1872	$45.46
16244	Albert G. Gibboney, Belleville, Pa	do	1868	26.77
	do	do	1868 and 1869	70.66
16245	Edwin R. Baldridge, Bennington Furnace, Pa.	do	1870 and 1872	38.26
16246	Benjamin Shaffer, Benvenue, Pa	do	1872 and 1873	7.10
16247	Templeton M. Breneman, Bermudian, Pa.	do	1866 and 1868	30.90
16248	Walter W. Weston, Bethany, Pa	do	1866 and 1868	65.82
	do	do	1870 and 1872	24.82
	do	do	1872 and 1874	27.58
16249	Isaac H. Robinson, Bethesda, Pa	do	1868 and 1870	3.75
	do	do	1866 and 1868	50.66
16250	John A. H. Rether, Bigler, Pa	do	1868 and 1870	19.30
	do	do	1870 and 1872	17.08
16251	T. G. Boyd, Black Hawk, Pa	do	do	21.16
	do	do	1872 and 1874	12.38
16252	Samuel Beerbower, Black Horse, Pa	do	1867 and 1868	3.46
16253	Jacb Kleinhaus, Blooming Grove, Pa	do	1868 and 1870	15.24
	do	do	1870 and 1872	44.76
	do	do	1872 and 1874	24.20
16254	Frank R. Young, Bloomfield, Pa	do	1866 and 1868	25.06
16255	Samuel Alexander, Bloseville, Pa	do	do	11.84
	do	do	1868 and 1869	3.18
16256	George Jack, Boalsburgh, Pa	do	1870 and 1872	41.68
	do	do	1866 and 1868	60.66
16257	John Bower, Bower Hill, Pa	do	1870 and 1872	29.64
16258	B. McKline, Bower's Station, Pa	do	1866 and 1867	6.43
16259	Jos. A. Bossard, Bossardsville, Pa	do	1870 and 1871	5.90
	do	do	1868 and 1870	13.76
16260	Jacob S. McNeal, Bossardsville, Pa	do	1871 and 1872	6.28
	do	do	1872 and 1874	14.64
16261	John Wall, Bowman's Creek, Pa	do	1866 and 1868	21.79
16262	M. C. Franks, Brackney, Pa	do	1870 and 1872	6.84
16263	W. W. McClure, Brandywine Manor, Pa	do	1866 and 1868	18.64
	do	do	1868 and 1870	45.64
	do	do	1870 and 1872	16.44
	do	do	1872 and 1874	22.44
16264	Samuel Engle, Brickerville, Pa	do	1867 and 1868	15.69
	do	do	1870 and 1872	15.40
	do	do	1872 and 1874	14.16
16265	Elwood Hilgus, Bridge Valley, Pa	do	1866 and 1867	11.73
16266	G. W. Briggs, Briggsville, Pa	do	1872 and 1874	5.67
	do	do	1870 and 1872	8.52
	do	do	1868 and 1870	9.70
	do	do	1867 and 1868	8.29
16267	Solomon Hamm, Brinkerton, Pa	do	1866 and 1868	26.81
	do	do	1870 and 1872	8.56
	do	do	1872 and 1874	18.88
16268	H. H. Hobinsack, Broad Axe, Pa	do	1870 and 1872	10.30
	do	do	1870	2.42
16269	W. W. Wellman, Brockwayville, Pa	do	1872	6.40
16270	D. B. Neefe, Brookland, Pa	do	1868	6.35
	do	do	1872	2.15
16271	Stacy Brown, Brownsburgh, Pa	do	1872 and 1874	18.68
	do	do	1866 and 1868	17.32
16272	Michael Baer, Bryansville, Pa	do	1870 and 1872	15.76
16273	Elias Aument, Buck, Pa	do	1866 and 1867	18.35
16274	William H. Shoemaker, Buck Horn, Pa	do	1872 and 1874	17.46
16275	N. H. Boyd, Buena Vista, Pa	do	1871 and 1872	39.74
16276	James P. Shoemaker, Buffalo Mills, Pa	do	1868 and 1869	15.49
16277	Philander Long, Burlington, Pa	do	do	65.00
16278	Samuel G. Peters, Bushkill, Pa	do	1866 and 1868	55.22
	do	do	1872 and 1874	23.68
16279	Jacob F. Hershy, Buyerstown, Pa	do	1868 and 1869	8.52
16280	Lewis W. Morgan, California, Pa	do	1869 and 1870	16.62
16281	S. C. Williamson, Caln, Pa	do	1866 and 1868	19.72
16282	Jonathan Miller, Cambridge, Pa	do	1866 and 1867	19.15
16283	Francis A. Drake, Cambridgeborough, Pa.	do	1870 and 1872	73.20
16284	Jacob L. Snyder, Campbellsville, Pa	do	1870	4.06
16285	Benjamin Fawcett, Campbellsville, Pa	do	1871 and 1872	10.15
16286	Jacob L. Snyder, Campbellsville, Pa	do	1866 and 1868	5.08
16287	B. F. Hill, Candor, Pa	do	1871 and 1872	13.13
	do	do	1872 and 1873	6.55
16288	Joseph Stifler, Canoe Creek, Pa	do	1866 and 1868	65.80
16289	Daniel Pendergast, Carbondale, Pa	do	1866	207.28
16290	John S. Cresswell, Cassville, Pa	do	1868 and 1869	18.89

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16291	William Conway, Carter's Camp, Pa	Compensation of postmasters readjusted, etc.	1868 and 1870	$9.32
16292	John P. Hannon, Centralia, Pa	do	1868 and 1869	90.58
16293	William Porter, Chapinville, Pa	do	1866 and 1868	7.90
	do	do	1870 and 1871	1.57
16294	John Hetzell, Chapman, Pa	do	1868 and 1870	59.16
16295	George E. Adams, Chelsea, Pa	do	1870 and 1872	34.54
	do	do	1872 and 1874	25.81
16296	M. D. Wagner, Chess Springs, Pa	do	1866 and 1868	91.26
	do	do	1872	7.20
16297	John Pearson, Chulasky, Pa	do	1872 and 1874	15.72
	do	do	1866 and 1868	62.64
	do	do	1868 and 1870	11.63
16298	Lot Rogers, Churchtown, Pa	do	1868 and 1869	10.78
16299	Anna M. Allen, Clara, Pa	do	1866 and 1868	11.32
	do	do	1870 and 1872	4.52
	do	do	1868 and 1870	7.00
	do	do	1872 and 1874	11.42
16300	John W. Miller, Clarington, Pa	do	1866 and 1868	32.70
	do	do	1868 and 1869	10.04
16301	S. C. Koonce, Clark, Pa	do	1867 and 1868	73.11
16302	Amos Walton, Clarksville, Pa	do	1866 and 1868	50.78
16303	Joseph W. Wriezer, Clay Lick, Pa	do	do	68.96
16304	David Bell, Claysville, Pa	do	1866	30.55
16305	Edward Dick, Clear Spring, Pa	do	1866 and 1868	64.30
	do	do	1872 and 1874	8.04
16306	John Miller, Clearfield Bridge, Pa	do	1871 and 1872	7.39
16307	Robert W. Drinker, Clifton, Pa	do	1868 and 1870	7.56
16308	Samuel Clokey, Clokey, Pa	do	1870 and 1871	21.71
16309	Samuel Brooks, Coalmont, Pa	do	1868	8.92
16310	Michael Cochran, Cochran Mills, Pa	do	1866 and 1867	24.32
16311	W. H. McAlister, Cocolamus, Pa	do	1870 and 1872	13.09
	do	do	1872 and 1874	11.66
16312	Albert Kraft, Codorus, Pa	do	1872 and 1873	7.63
	do	do	1868	1.70
16313	Charles Persun, Cogan House, Pa	do	1872 and 1874	6.72
	do	do	1866 and 1868	3.66
	do	do	1870 and 1872	9.72
	do	do	1868 and 1870	12.82
16314	Henry Andrews, Colmanville, Pa	do	1868 and 1869	3.29
16315	Walter Bunting, Colerain, Pa	do	1870	4.68
	do	do	1870 and 1872	18.92
16316	Eli H. Nelson, Colesburgh, Pa	do	1868 and 1870	16.66
16317	Thomas Baker, Collamer, Pa	do	1866 and 1868	6.00
16318	Alex. W. Martin, Collamer, Pa	do	1872	.79
	do	do	1870 and 1872	27.67
16319	William Gennert, Columbia Cross Roads, Pa.	do	1868	6.77
	do	do	1866 and 1868	25.96
16320	C. G. McClelland, Columbia Cross Roads, Pa.	do	1868 and 1870	32.72
16321	William Gilliland, Comettsburgh, Pa	do	1866 and 1868	5.60
16322	S. B. Hockenbery, Concord, Pa	do	do	74.80
	do	do	1870 and 1872	21.30
	do	do	1872 and 1874	21.92
16323	James W. Harry, Conshohocken, Pa	do	1866 and 1868	195.36
16324	W. H. Kinter, Cooksport, Pa	do	1870 and 1872	16.22
	do	do	1872 and 1874	36.66
16325	John C. Ackels, Coon Island, Pa	do	1866	1.73
16326	George W. Chaney, Coon Island, Pa	do	1868	.86
16327	W. J. Bradley, Cooperstown, Pa	do	1868 and 1870	52.75
16328	Samuel Troutwein, Cottage, Pa	do	1866 and 1868	12.42
	do	do	1870 and 1872	7.66
	do	do	1872 and 1874	7.94
16329	Andrew McFarland, Cross Creek Village, Pa.	do	do	22.74
	do	do	1866 and 1868	115.96
16330	S. G. Blanchard, Cross Cut, Pa	do	1872 and 1874	2.32
16331	Daniel Hause, Cross Forks, Pa	do	1866 and 1868	22.18
	do	do	1868 and 1870	12.60
16332	John Ward, Curllsville, Pa	do	1866 and 1868	90.15
16333	William Dale, Daleville, Pa	do	do	79.34
	do	do	1870 and 1872	23.14
	do	do	1872 and 1874	22.98
16334	John F. Geesey, Dallastown, Pa	do	1867 and 1868	41.43
	do	do	1868 and 1870	6.41
16335	John R. Green, Dallastown, Pa	do	1870	1.26
	do	do	1872 and 1874	15.68
16336	Marcus Appley, Damascus, Pa	do	1870 and 1872	31.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16336	Marcus Appley, Damascus, Pa	Compensation of postmasters readjusted, etc.	1872 and 1873	$13.01
16337	George O. Lemley, Davistown, Pa	do	1867 and 1868	2.69
	do	do	1868 and 1870	15.76
	do	do	1872 and 1874	11.78
16338	W. T. McFarland, Dayton, Pa	do	do	115.48
16339	W. N. Prothers, Decker's Point, Pa	do	1866 and 1868	62.66
	do	do	1868 and 1870	17.84
	do	do	1872 and 1874	23.54
16340	Francis Merrick, Dempseytown, Pa	do	1868	4.23
	do	do	1872	3.26
16341	William Kent, Dent, Pa	do	1866 and 1868	5.30
	do	do	1868 and 1870	5.84
	do	do	1870 and 1872	5.70
	do	do	1872 and 1874	13.84
16342	Robert N. Willis, Donally's Mills, Pa	do	1867 and 1868	9.76
	do	do	1868 and 1869	11.32
16343	H. M. Millhoff, Donegal, Pa	do	1873 and 1874	15.27
16344	Theodore W. Luding, Douglassville, Pa,	do	1866	1.17
16345	John Goshorn, Doylesburgh, Pa	do	1868 and 1870	5.58
16346	Thomas Hyatt, Draketown, Pa	do	1866 and 1868	16.38
	do	do	1868	1.51
16347	Redmund C. Drum, Drum's, Pa	do	1870 and 1871	10.53
16348	George E. Stewart, Dry Run, Pa	do	1866 and 1868	74.98
16349	H. H. Woodal, Dublin Mills, Pa	do	1868 and 1869	7.44
16350	E. S. Taylor, Dunkard, Pa	do	1868 and 1870	13.76
	do	do	1870 and 1872	23.22
16351	A. B. Dunning, Dunning, Pa	do	1868	25.10
16352	John T. Summy, Dunningsville, Pa	do	1869 and 1870	5.49
16353	Nathaniel Waterbury, Durham, Pa	do	1869 and 1870	4.42
	do	do	1870 and 1871	14.67
16354	George W. Steinmetz, Durlach, Pa	do	1868 and 1869	8.49
16355	E. B. Kimble, Dyberry, Pa	do	1866 and 1868	48.44
	do	do	1868 and 1870	29.02
16356	Seth Colvin, East Benton, Pa	do	1866 and 1868	12.34
16357	James McMillan, East Bridgewater, Pa	do	1870 and 1872	5.08
16358	John Waddington, East Brook, Pa	do	1870	3.54
	do	do	1870 and 1872	17.98
16359	Francis P. McGraw, East Freedom, Pa	do	do	31.50
16360	George Corbin, East Green, Pa	do	do	15.20
16361	Andrew Holtzworth, East Hemphill, Pa	do	1870 and 1871	5.39
16362	Wm. McBurney, East Liberty, Pa	do	1867 and 1868	46.73
16363	Hiram Horetz, East Mauch Chunk, Pa	do	1873	70.29
16364	William H. Balliet, East Sandy, Pa	do	1868 and 1870	23.00
	do	do	1870 and 1872	3.82
	do	do	1872 and 1874	14.78
16365	Thomas Morrow, East Waterford, Pa	do	1866 and 1868	103.66
	do	do	1868 and 1870	36.22
	do	do	1872 and 1874	97.40
16366	Joseph Hamilton, Eau Claire, Pa	do	1868 and 1869	1.53
16367	B. N. McComb, Ebenezer, Pa	do	1870 and 1872	24.20
	do	do	1872 and 1874	31.82
16368	Samuel Richard, Edenburgh, Pa	do	1866 and 1868	47.70
16369	J. R. Brasted, Edsalville, Pa	do	1870 and 1872	10.22
	do	do	1866 and 1868	6.76
16370	Jacob Nyce, Egypt Mills, Pa	do	do	17.36
16371	R. C. Osburn, Eldersville, Pa	do	1868	4.16
	do	do	1866 and 1868	87.56
16372	W. M. Ralston, Elderton, Pa	do	do	61.78
	do	do	1868 and 1870	40.50
16373	J. J. Canan, El Dorado, Pa	do	1866 and 1868	14.76
	do	do	1868 and 1870	9.66
16374	W. H. Tegler, Eldred, Pa	do	1867 and 1868	11.47
	do	do	1868 and 1869	14.23
16375	Thomas Y. Boyd, Eldred, Pa	do	1869 and 1870	14.24
	do	do	1870 and 1872	12.46
16376	George W. Brown, Eldredville, Pa	do	1866 and 1868	42.32
16377	Robert Dunbarr, Elimsport, Pa	do	1868 and 1870	35.66
	do	do	1870 and 1872	13.70
16378	R. S. Ross, Elizabethtown, Pa	do	1866 and 1867	92.90
16379	Joseph T. Coughanour, Elm, Pa	do	1866 and 1868	114.80
16380	John F. Campbell, Elm, Pa	do	1869 and 1870	4.74
	do	do	1872 and 1874	30.14
16381	Mrs. Ann Gulick, Elysburgh, Pa	do	1866 and 1868	35.86
	do	do	1870 and 1872	16.38
	do	do	1872 and 1874	28.20
16382	D. D. Moriarty, Emlenton, Pa	do	1867 and 1868	22.90
16383	Jerry English, English Centre, Pa	do	1868 and 1870	19.66
16384	A. P. Houck, Etters, Pa	do	1866	33.39

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16385	James Ewing, Ewing's Mills, Pa	Compensation of postmasters readjusted, etc.	1872 and 1874	$8.02
16386	S. E. Ellis, Exchange, Pa	do	1873 and 1874	4.23
16387	W. B. Levan, Exeter Station, Pa	do	1869 and 1870	7.62
16388	James Bell, jr., Experiment Mills, Pa	do	1868 and 1870	110.26
16389	J. W. Sullivan, Fairfield, Pa	do	1867 and 1868	77.19
16390	Townsend H. Sharpless, Fairville, Pa	do	1872 and 1884	17.76
	do	do	1871 and 1872	21.89
16391	Wm. Grimes, Falmouth, Pa	do	do	11.14
16392	S. M. Seldomridge, Farmersville, Pa	do	1870 and 1872	7.08
	do	do	1866 and 1868	9.82
16393	James M. Dixon, Farmington, Pa	do	1868	26.70
16394	Alice K. Bunting, Fayette Springs, Pa	do	1871 and 1872	14.67
16395	W. N. Horner, Fayetteville, Pa	do	1872 and 1874	43.42
16396	Nathan Trexler, Fetherolfsville, Pa	do	1866 and 1868	8.96
16397	William R. Jones, Fisher's Ferry, Pa	do	do	98.36
16398	John T. Moss, Fitz Henry, Pa	do	1872 and 1874	.30
	do	do	1870 and 1872	9.86
	do	do	1868 and 1870	7.28
16399	James W. Buckman, Fitzwatertown, Pa	do	do	10.56
16400	Alva Van Fleet, Fleetville, Pa	do	1868	3.12
16401	Francis B. Davison, Fleetville, Pa	do	1871 and 1872	18.39
	do	do	1872 and 1874	28.16
16402	George Heil, Flicksville, Pa	do	1867 and 1868	21.15
16403	William M. Klinetob, Foundryville, Pa	do	1870 and 1871	2.30
16404	Samuel Martin, Fountain Dale, Pa	do	1866	4.11
16405	Daniel B. Martin, Fountain Dale, Pa	do	1870 and 1872	7.32
16406	Franklin Knauer, Fountain Inn, Pa	do	1866 and 1868	6.96
16407	James McCutchon, Frankfort Springs, Pa.	do	1866 and 1868	56.34
16408	George L. Hill, Fredericktown, Pa	do	1871 and 1872	8.64
16409	Samuel K. Lutz, Fritztown, Pa	do	1868	.33
16410	Jacob Zinn, Fritztown, Pa	do	1872 and 1874	7.70
16411	James E. Grable, Fryburgh, Pa	do	1868 and 1870	62.56
16412	Joseph Swift, Fulton House, Pa	do	1866 and 1868	31.30
	do	do	1868 and 1870	18.98
	do	do	1870 and 1872	14.40
16413	H. C. Vermilyea, Gaines, Pa	do	1866 and 1868	37.12
16414	David Wills, Gallitzen, Pa	do	1870	16.08
16415	Simon Vought, Gebhart's, Pa	do	1868	12.30
	do	do	1868 and 1869	18.47
16416	Jacob G. Zerr, Geiger's Mills, Pa	do	1866 and 1868	9.88
16417	Harriet Young, General Wayne, Pa	do	1868 and 1870	12.60
	do	do	1870 and 1872	29.26
	do	do	1872 and 1874	18.56
	do	do	1866 and 1868	60.10
16418	Chas. Hipp, Germania, Pa	do	do	25.42
16419	G. W. Roper, Germany, Pa	do	do	13.34
16420	M. A. Walling, Germany, Pa	do	1870 and 1872	8.02
16421	Reuben Tuttle, Gibson, Pa	do	1866 and 1868	84.64
	do	do	1886 and 1870	36.38
16422	Peter Gilbert, Gilbert, Pa	do	1870 and 1872	22.04
16423	W. H. Ramberge, Girardville, Pa	do	1868 and 1869	66.11
16424	Henry Chevalier, Glenn, Pa	do	1870 and 1872	1.18
	do	do	1866 and 1868	4.16
	do	do	1872 and 1874	9.74
16425	John Stoddart, Glenn Union, Pa	do	1869 and 1870	12.03
	do	do	1870 and 1872	44.33
16426	Henry G. Snapp, Glyndon, Pa	do	1868 and 1870	7.72
16427	Joseph Sutherland, Good Intent, Pa	do	1870 and 1872	21.87
16428	Robt. R. Ebilhar, Goodville, Pa	do	1867 and 1868	14.97
16429	Amos Hershey, Gordonsville, Pa	do	1866 and 1868	16.88
16430	Isaac H. Haines, Goshen, Pa	do	do	27.70
16431	C. W. M. Murray, Granville Summit, Pa	do	1870 and 1872	23.76
16432	J. S. Carothers, Greason, Pa	do	1868 and 1870	17.22
16433	C. E. Vosburg, Green Grove, Pa	do	1870 and 1872	12.97
16434	H. P. Bigham, Green Mount, Pa	do	do	7.94
	do	do	1866 and 1868	38.18
16435	T. D. Parker, Greenwood Furnace, Pa	do	1873 and 1874	12.63
16436	Jno. W. Spencer, Guy's Mills, Pa	do	1866 and 1867	17.73
16437	A. B. Walker, Hamlinton, Pa	do	1866 and 1868	135.66
16438	Hamilton Fish, Hammersley's Forks, Pa	do	do	47.30
16439	E. L. Rosenberger, Harleysville, Pa	do	1872 and 1874	29.74
	do	do	1871 and 1872	15.28
16440	Marvin Williams, Harmerville, Pa	do	1866 and 1868	53.24
16441	Francis A. Drake, Harmonsburgh, Pa	do	1867	4.81
16442	M. M. Morrow, Harnedsville, Pa	do	1870 and 1872	30.80
	do	do	1872 and 1874	11.72
16443	Harriet Cox, Harrisville, Pa	do	1867 and 1868	76.37

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16443	Harriet Cox, Harrisville, Pa	Compensation of postmasters readjusted, etc.	1868 and 1869	$11.38
16444	J. R. Wilson, Harshaville, Pa	do	1870 and 1872	8.56
16445	Wm. Crousdale, Hartville, Pa	do	do	37.70
16446	Ephraim McClellan, Harvey's, Pa	do	1866	5.48
16447	Jacob G. Leidy, Hartfield, Pa	do	1872	7.17
	do	do	1866 and 1868	111.32
16448	David Hayes, Hayesville, Pa	do	do	13.96
	do	do	1872 and 1874	71.62
16449	Augustus L. Steuben, Hecktown, Pa	do	do	7.16
	do	do	1870 and 1872	21.74
16450	Henry C. Matthews, Hellam, Pa	do	do	15.82
	do	do	1872 and 1874	16.02
16451	George Paff, Hellam, Pa	do	1868 and 1869	3.59
16452	Joseph Wandel, Hemlock Creek, Pa	do	1867 and 1868	31.41
16453	Ira Nichols, Herrick Centre, Pa	do	1866 and 1868	9.38
16454	Chas. L. Stewart, Herrickville, Pa	do	1866	3.34
16455	James P. Young, Herriottsville, Pa	do	1867 and 1868	11.62
	do	do	1868 and 1870	3.90
	do	do	1870 and 1871	4.67
16456	Alexander Crowl, Hickory Hill, Pa	do	1872 and 1874	18.76
	do	do	1868 and 1870	7.95
16457	Jacob S. Steiner, Hickorytown, Pa	do	1869 and 1870	4.97
16458	R. H. Wales, High Lake, Pa	do	1872 and 1874	32.87
16459	Conrad Alleman, High Spire, Pa	do	1870 and 1872	104.70
	do	do	1872	12.13
16460	Hannah M. Wiley, Hillsview, Pa	do	1866	3.62
16461	J. Burk, Hillsville, Pa	do	1870 and 1872	22.52
	do	do	1872 and 1874	16.04
16462	John Roberts, Hinkletown, Pa	do	1866	4.83
16463	Henry S. Fritz, Hinkletown, Pa	do	1866 and 1868	33.83
16464	P. H. Good, Hobbie, Pa	do	1866 and 1867	22.89
16465	Margery B. Snowden, Hogestown, Pa	do	1866 and 1868	23.04
10466	Lyman W. Hamlin, Hollisterville, Pa	do	1870 and 1872	40.56
	do	do	1872 and 1873	10.78
16467	Thomas D. Moore, Hookstown, Pa	do	1866 and 1868	50.16
	do	do	1872 and 1874	28.14
18468	Jacob Swart, Hopkins Mill, Pa	do	1870 and 1872	10.12
16469	Thomas B. Shay, Horsham, Pa	do	1866 and 1868	67.73
	do	do	1873	10.78
16470	Henry Protheno, Horton's, Pa	do	1866 and 1868	59.98
	do	do	1870 and 1872	11.50
16471	Charles Schoenly, Hosensack, Pa	do	1872	.67
	do	do	1872 and 1873	5.40
16472	Jesse P. Stevens, Hubelsville, Pa	do	1866 and 1868	24.34
16473	A. C. Carlisle, Hughesville, Pa	do	1866 and 1868	50.23
16474	Mrs. Sarah A. Kresler, Hummelstown, Pa.	do	1870 and 1872	144.06
16475	Andrew Ervin, Huntingdon Valley, Pa.	do	1872 and 1874	83.30
16476	George W. Leightz, Hustontown, Pa	do	1866 and 1868	45.38
	do	do	1870 and 1871	4.60
16477	Robert McKee, Irish Town, Pa	do	1866 and 1867	15.86
16478	M. L. Zalmiser, Jackson Centre, Pa	do	1868 and 1869	11.35
16479	Jeremiah Y. Herman, Jackson Hall, Pa	do	1868 and 1868	7.15
16480	N. Gardner, Jacksville, Pa	do	1872 and 1874	15.84
	do	do	1871 and 1872	16.18
16481	John Householder, James Creek, Pa	do	1866 and 1868	52.38
16482	Charles Gilbert, Jarrettown, Pa	do	1868 and 1870	9.82
	do	do	1870 and 1871	3.75
16483	Jacob Rebert, Jefferson Station, Pa	do	1870 and 1872	21.94
16484	C. P. Craver, Jennerstown, Pa	do	1868 and 1869	8.57
16485	John A. Sipe, Jennerstown, Pa	do	1869 and 1870	15.58
	do	do	1872 and 1874	8.22
16486	Lovisa Graves, Jenningsville, Pa	do	1866 and 1868	4.04
16487	John J. Coolidge, Jerseyville, Pa	do	1870 and 1872	17.78
16488	William Gingles, Jerseytown, Pa	do	do	5.76
16489	Andrew Madison, Jerseytown, Pa	do	1867 and 1868	15.85
16490	L. P. Ash, Joanna Furnace, Pa	do	1871 and 1872	1.51
16491	M. G. Stier, Johnsonville, Pa	do	1870 and 1872	35.26
16492	Levi Woomer, Julian Furnace, Pa	do	do	32.14
16493	D. J. Boyer, Kantz, Pa	do	1868 and 1870	26.13
16494	Samuel A. Walters, Kelly Cross Roads, Pa.	do	1866 and 1868	28.60
16495	Martha S. Patton, Kendall, Pa	do	1870 and 1872	4.90
	do	do	1872 and 1874	10.24
16496	James McWilliams, Kerr's Store, Pa	do	1866 and 1868	36.32
	do	do	1870 and 1872	11.76
16497	Sydney Kessler, Kessler, Pa	do	1866 and 1868	1.82
16498	Sanford Moore, Ketcham, Pa	do	1866 and 1868	4.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16499	J. D. Jobe, Kilgore, Pa	Compensation of postmasters readjusted, etc.	1872 and 1874	$7.14
	do	do	1871 and 1872	3.81
16500	Samuel Buck, Killinger, Pa	do	1866	3.38
16501	John R. Pugh, King of Prussia, Pa	do	1870	24.50
	do	do	1870 and 1872	82.54
16502	S. Becker, Kirbyville, Pa	do	1872 and 1874	.91
	do	do	1870 and 1872	2.64
16503	S. R. Yearick, Kratzerville, Pa	do	1866 and 1868	43.52
	do	do	1870	5.67
16504	Jacob A. Smith, Kreamer, Pa	do	1866 and 1868	18.74
16505	Lewis Semmel, Kreidersville, Pa	do	1872 and 1874	8.16
16506	G. R. Shafer, Kunckle, Pa	do	1870 and 1872	8.14
	do	do	1868 and 1870	5.80
16507	John M. Williamson, Lackawaxen, Pa	do	1868 and 1869	38.98
16508	Edgar Osterhout, La Grange, Pa	do	1872 and 1874	30.84
	do	do	1870 and 1872	18.70
	do	do	1868 and 1870	4.06
	do	do	1866 and 1868	9.06
16509	William Mordon, Lake, Pa	do	1869	1.98
16510	Ethan Gross, Lake Pleasant, Pa	do	1868 and 1870	8.34
	do	do	1870	1.02
16511	Aaron Reinhard, Lanark, Pa	do	1872 and 1874	11.12
16512	Washington Ewing, Landenburgh, Pa	do	1870 and 1872	48.26
	do	do	1868 and 1870	21.72
	do	do	1867 and 1868	24.50
16513	J. H. Landis, Landis' Store, Pa	do	1868 and 1870	4.46
16514	Margaret Parkinson, Larimer Station, Pa.	do	1866 and 1868	90.14
16515	Gilliam Flick, Lavansville, Pa	do	1867 and 1868	11.17
16516	David Kirkland, Leasureville, Pa	do	1872 and 1874	22.40
	do	do	1867 and 1868	10.05
16517	James Laughlin, Leatherwood, Pa	do	1866 and 1868	69.32
	do	do	1868 and 1870	11.23
16518	John H. Becker, Ledge Dale, Pa	do	1872 and 1874	14.30
	do	do	1866 and 1868	23.30
16519	George D. Emrick, Leech's Corners, Pa	do	1873 and 1874	23.51
16520	Joseph Williams, Lee's Cross Roads, Pa	do	1872 and 1874	34.88
16521	William Clark, Lee's Cross Roads, Pa	do	1866	2.62
16522	Joseph Hermon, Leidy, Pa	do	1871 and 1872	6.90
	do	do	1872 and 1873	6.71
16523	Joseph T. Hess, Leithsville, Pa	do	1868 and 1870	5.44
	do	do	1866 and 1868	5.25
16524	George F. Markel, Lenhartsville, Pa	do	1866 and 1867	18.78
16525	William T. Daly, Leona, Pa	do	1866 and 1868	36.32
	do	do	1872 and 1874	12.88
16526	J. H. Woodruff, Liberty, Pa	do	1866	11.48
16527	Elijah H. Horton, Liberty Corners, Pa	do	1866 and 1867	8.46
16528	David Brown, Liberty Square, Pa	do	1872 and 1874	25.02
	do	do	1866 and 1868	59.60
	do	do	1868 and 1870	11.52
16529	Homer E. Hoopes, Lima, Pa	do	1871 and 1872	30.26
16530	Lewis N. Benner, Limeport, Pa	do	1872	1.14
	do	do	1870 and 1872	5.68
16531	G. L. Low, Lime Ridge, Pa	do	1866 and 1868	18.26
16532	Washington Craig, Limestone, Pa	do	do	55.43
	do	do	1869 and 1870	48.80
	do	do	1870 and 1872	27.36
16533	Mat Merchant, Lincolnville, Pa	do	do	23.54
16534	Ellen Donachy, Linden, Pa	do	1868	7.89
16535	James Dauman, Lionville, Pa	do	1866 and 1868	61.60
16536	John H. Bowman, Lisburn, Pa	do	1870 and 1872	25.06
	do	do	1872 and 1874	26.96
16537	Samuel Ziegenfus, Little Gap, Pa	do	1868 and 1870	3.62
	do	do	1866 and 1868	19.84
16538	Edward B. Beardslee, Little Meadows, Pa.	do	do	40.58
16539	John Stailey, Liverpool, Pa	do	1867 and 1868	72.23
16540	Lewis Zimmerman (insane), Llewellyn, Pa.	do	1870 and 1872	28.94
	do	do	1869 and 1870	16.87
16541	C. Coleman, Llewellyn, Pa	do	1868 and 1869	9.48
16542	William Burtges, Logan Mills, Pa	do	1866	1.36
16543	Noah O. Goodling, Loganville, Pa	do	1866 and 1868	16.10
	do	do	1868 and 1869	3.06
16544	W. A. Coulter, London, Pa	do	1870	.45
	do	do	1870 and 1872	24.42
16545	Samuel Bell, London, Pa	do	1868	1.13
16546	E. B. Bailey, Londonderry, Pa	do	1870 and 1872	8.54

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16546	E. B. Bailey, Londonderry, Pa	Compensation of postmasters readjusted, etc.	1868 and 1870	$6.00
16547	Euclydus P. Skelton, Lower Chanceford, Pa.	do	1866	11.73
16548	Charles D. Allen, Lowville, Pa	do	1872 and 1874	3.52
16549	David K. Minick, Loysville, Pa	do	1867 and 1868	29.13
16550	Peter Stewart, Lucesco, Pa	do	1872 and 1874	19.50
16551	R. H. Moore, Luthersburgh, Pa	do	1866 and 1868	66.24
	do	do	1868 and 1869	46.92
16552	Edward H. Brown, Lyles, Pa	do	1866 and 1868	9.72
16553	E. S. Handrick, Lynn, Pa	do	1867 and 1868	33.85
	do	do	1868 and 1869	8.15
16554	John Klepfer, McAlevy's Fort, Pa	do	1866 and 1868	46.41
16555	Mary Ham, McClellandtown, Pa	do	1870	2.88
16556	J. C. Crawford, McCulloch's Mills, Pa	do	1871 and 1872	10.56
	do	do	1872 and 1873	6.76
16557	Theodore H. Meminger, McCulloch's Mills, Pa.	do	1873 and 1874	4.05
16558	S. N. Quaggle, McElhattan, Pa	do	1868 and 1869	6.16
16559	J. H. Pile, McKeansburgh, Pa	do	1866 and 1868	29.06
16560	J. B. Hall, McKee's Half Falls, Pa	do	1866	2.68
16561	John B. Boyd, McVill, Pa	do	1869 and 1870	10.41
	do	do	1870 and 1872	24.22
	do	do	1872 and 1874	18.90
16562	Emily C. Coolbaugh, Macedonia, Pa	do	1868 and 1870	6.74
	do	do	1866 and 1868	5.56
16563	Hugh Henderson, Madison, Pa	do	1870 and 1872	24.63
	do	do	1869 and 1870	20.33
16564	Jacob Weisen, Mahantango, Pa	do	1866 and 1868	48.86
	do	do	1870 and 1872	17.96
	do	do	1872 and 1874	7.10
16565	Uriah J. Campbell, Mainville, Pa	do	1868 and 1870	9.38
	do	do	1870 and 1872	20.57
16566	H. K. Cleaver, Manatawny, Pa	do	1871 and 1872	5.11
16567	John Drayer, Manchester, Pa	do	1866 and 1868	35.42
16568	Joseph Mellinger, Manor, Pa	do	1870 and 1871	8.01
	do	do	1866 and 1868	57.78
16569	Levi M. Ryckman, Manor Dale, Pa	do	1870 and 1872	224.34
	do	do	1872 and 1874	13.44
	do	do	1869 and 1870	110.16
16570	Jacob Bower, Mannsville, Pa	do	1870 and 1872	7.81
16571	M. S. Adams, Maple Furnace, Pa	do	1866 and 1868	22.13
16572	A. H. Bauman, Mapleton Depot, Pa	do	1866 and 1868	84.83
16573	Thomas Hines, Margaretta Furnace, Pa.	do	1870 and 1872	20.88
	do	do	1869 and 1870	6.70
	do	do	1872 and 1873	17.56
16574	A. S. Whitekettle, Markelsville, Pa	do	1872 and 1874	9.14
	do	do	1870 and 1872	9.10
	do	do	1868 and 1870	18.50
	do	do	1866 and 1868	62.70
16575	Andrew Statler, Marion, Pa	do	1874	7.14
16576	Abraham M. Martin, Marshallton, Pa	do	1868 and 1869	14.36
16577	F. S. Hoak, Martinsville, Pa	do	1870 and 1872	15.80
	do	do	1868 and 1870	4.76
16578	Joseph Masterson, Mastersonville, Pa	do	1870 and 1872	19.70
	do	do	1872 and 1874	8.38
16579	Julius Sharff, Masthope, Pa	do	1872 and 1873	24.13
	do	do	1868 and 1870	56.28
16580	John Swoyer, Maxatawny, Pa	do	1866 and 1868	9.06
	do	do	1868 and 1870	28.62
16581	Seth K. Grim, Maxatawny, Pa	do	1866	1.29
16582	Elmira Stackhouse, Maytown, Pa	do	1872 and 1874	26.76
	do	do	1871 and 1872	26.09
16583	Augustus K. Green, Meadow Gap, Pa	do	1869 and 1870	3.19
16584	Robert Wilson, Mechanicsburgh, Pa	do	1866 and 1868	392.02
16585	James P. Evans, Mechanic's Grove, Pa	do	1870 and 1872	8.98
	do	do	1869 and 1870	5.13
16586	Hiram Watson, Mechanics' Grove, Pa	do	1866 and 1869	5.13
	do	do	1866 and 1868	13.54
16587	William Jennings, Mehoopany, Pa	do	1866 and 1867	22.36
16588	William H. Barnes, Mehoopany, Pa	do	1866	6.58
16589	George Crise, Mendon, Pa	do	1868 and 1870	7.90
	do	do	1866 and 1868	37.69
16590	Wilson C. Hicks, Meyersdale, Pa	do	1871 and 1872	29.46
16591	R. W. Smith, Middleburgh, Pa	do	1866 and 1867	9.44
16592	Benjamin B. Potter, Middlebury Centre, Pa.	do	1872 and 1873	25.53
	do	do	1872	5.45

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16593	Henry Ulsh, Middle Creek, Pa	Compensation of postmasters readjusted, etc.	1872 and 1874	$5.74
	do	do	1868	8.28
16594	Isaac Teese, Middle Creek, Pa	do	1866 and 1867	24.84
16595	John Bechtel, Middleport, Pa	do	1868	40.46
	do	do	1868 and 1869	32.16
16596	H. C. Pilgrim, Middle Spring, Pa	do	1872	1.58
16597	Jacob Rorer, Milestown Pa	do	1866 and 1867	76.59
16598	E. C. Clark, Mill City, Pa	do	1873 and 1874	36.19
16599	Benjamin R. Faust, Mill Creek, Pa	do	1867 and 1868	50.49
16600	G. E. Hamilton, Milledgeville, Pa	do	1869 and 1870	9.07
	do	do	1870 and 1872	48.84
16601	Mrs. J. W. Jennings, Millerstown, Pa	do	1866 and 1868	168.34
16602	Jos. Mann, Millport, Pa	do	do	87.04
	do	do	1868 and 1870	8.78
16603	Eliza A. Molyneux, Millview, Pa	do	1870 and 1871	3.61
	do	do	1866 and 1868	23.28
16604	William Molyneux, Millview, Pa	do	1872 and 1874	9.38
	do	do	1871 and 1872	6.01
16605	William Tompkins, Milwaukee, Pa	do	1866 and 1867	5.37
16606	Peter Bentz, Millway, Pa	do	1870 and 1872	4.17
	do	do	1868 and 1870	14.50
16607	Mrs. Mary Laurence, Minersville, Pa	do	do	489.08
	do	do	1866 and 1868	596.98
16608	W. K. Mitchell, Mitchell's Creek, Pa	do	do	47.12
16609	J. Jacob Mohr, Mohrsville, Pa	do	1870	2.51
	do	do	1872 and 1874	18.02
16610	L. H. Lenhart, Molltown, Pa	do	1871 and 1872	7.28
	do	do	1872 and 1874	13.08
16611	John Maxton, Monocacy, Pa	do	1870 and 1871	13.57
16612	Emma Maxton, Monocacy, Pa	do	1871 and 1872	4.74
	do	do	1871 and 1874	119.48
16613	P. W. Killinger, Monroe Forge, Pa	do	1868 and 1869	11.85
16614	James Dimpsey, Monroeville, Pa	do	1872 and 1874	5.28
	do	do	1870 and 1872	9.10
16615	Henry Shiery, Mount Alto, Pa	do	1866 and 1868	65.90
	do	do	1868 and 1869	11.51
16616	Samuel Hartzell, Montgomery Station, Pa.	do	1872 and 1874	78.38
	do	do	1866 and 1868	47.12
16617	S. G. Ewing, Moore, Pa	do	1866 and 1867	21.79
16618	John D. Smith, Moreland, Pa	do	1866 and 1868	24.28
	do	do	1868 and 1869	2.84
16619	William Brown, Moscow, Pa	do	1866	22.25
16620	Henry P. Boggs, Mosiertown, Pa	do	1870 and 1872	20.30
	do	do	1872 and 1873	5.62
16621	Lewis F. Mosser, Mosserville, Pa	do	1872 and 1874	17.02
16622	Samuel L. Miller, Mount Holly Springs, Pa.	do	1866 and 1867	35.75
16623	A. Bates Grubb, Mount Hope, Pa	do	1866 and 1868	16.48
	do	do	1868 and 1870	10.08
16624	Jos. H. Ferguson, Mount Joy, Pa	do	1872 and 1874	179.80
	do	do	1870 and 1872	194.40
	do	do	1868 and 1870	171.78
16625	John P. Eaton, Mount Lebanon, Pa	do	1870 and 1872	15.50
16626	Emanuel Harman, Mount Lebanon, Pa	do	1867 and 1868	7.29
16627	Edward F. Morris, Mount Morris, Pa	do	1866 and 1868	22.08
16628	John D. Ross, Mount Vernon, Pa	do	do	5.80
	do	do	1872 and 1874	21.80
	do	do	1868 and 1870	19.04
	do	do	1870 and 1872	18.16
16629	Peter Glick, Mount Zion, Pa	do	do	12.24
16630	Mainer Benscoter, Muhlenburgh, Pa	do	1866 and 1868	53.44
16631	J. L. Williamson, Murrysville, Pa	do	1872 and 1874	24.52
	do	do	1869 and 1870	6.79
16632	G. H. Baxter, Nelson, Pa	do	1872 and 1874	57.20
16633	Samuel Holstein, Neshannock Falls, Pa	do	1866	.80
16634	Samuel M. Berry, Neshannock Falls, Pa	do	1866 and 1868	55.70
	do	do	1868	3.69
16635	Joseph W. Frey, Nescopeck, Pa	do	1866 and 1868	122.41
16636	Jacob F. Brittenbender, Nescopeck, Pa	do	1870 and 1872	41.10
16637	Stephen D. Sterigere, New Albany, Pa	do	1866 and 1868	114.80
16638	Gregory Hankinson, New Baltimore, Pa	do	1870 and 1872	20.61
16639	William Gillespie, New Baltimore, Pa	do	1872	.88
16640	George Harland, Newburgh, Pa	do	1866 and 1868	111.76
16641	David L. Buck, New Enterprise, Pa	do	do	19.54
	do	do	1872 and 1874	50.66
16642	R. S. Elliott, New Florence, Pa	do	1868	12.32
	do	do	1872 and 1874	44.72

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16643	Christian Moyer, New Galena, Pa	Compensation of postmasters readjusted, etc.	1866 and 1867	$11.64
16644	John B. Johnson, New Galilee, Pa	do	1870 and 1872	85.58
16645	G. W. Smith, New Holland, Pa	do	1866 and 1868	74.94
16646	Joel Barto, New Jerusalem, Pa	do	1869	1.11
16647	William R. Conn, New Lebanon, Pa	do	1866 and 1867	38.25
16648	Abraham C. Grove, New Labanon, Pa	do	1867 and 1868	49.26
	do	do	1872	2.27
16649	I. R. McMillen, New Lexington, Pa	do	1868 and 1870	25.82
	do	do	1872 and 1873	17.97
16650	Tilghman Arner, New Mahoning, Pa	do	1868 and 1870	12.04
	do	do	1870 and 1872	15.88
	do	do	1872 and 1874	18.66
16651	William C. Ward, New Milford, Pa	do	1868	15.97
16652	W. R. Van De Grift, Newportville, Pa	do	1866 and 1868	42.58
16653	Henry R. Tomer, New Texas, Pa	do	1866	14.58
16654	John Agnew, Newmanville, Pa	do	1872	2.69
16655	Isaac Haldeman, Newton Square, Pa	do	1866 and 1868	33.36
	do	do	1870 and 1872	40.06
16656	Michael Sypher, Nippanose, Pa	do	1871 and 1872	6.32
	do	do	1872 and 1874	41.20
16657	R. O. Hells, North East, Pa	do	1866 and 1868	133.92
16658	Samuel Coulter, North East, Pa	do	do	94.57
16659	Frederick Bryant, North Jackson, Pa	do	do	20.70
	do	do	1870 and 1872	23.10
	do	do	1872 and 1874	8.74
16660	John A. Morrison, North Liberty, Pa	do	1866 and 1868	32.48
16661	Samuel Moland, North Liberty, Pa	do	1873 and 1874	7.42
16662	Adam Rectzert, North Oakland, Pa	do	1870 and 1872	9.83
16663	Marcellus Elliott, North Rome, Pa	do	1866 and 1868	10.38
16664	James M. Runyan, North Sewickley, Pa	do	1866 and 1867	8.77
16665	Milton A. Clow, North Sewickley, Pa	do	1868 and 1869	12.13
	do	do	1867 and 1868	14.61
16666	A. M. Mecklem, North Sewickley, Pa	do	1869 and 1870	12.13
	do	do	1870 and 1872	13.56
16667	Thomas J. McKee, North Springfield, Pa	do	1871 and 1872	25.95
16668	Lysander P. Jackson, North Springfield, Pa.	do	1870 and 1871	24.18
16669	O. J. Jardine, North Star, Pa	do	1870 and 1872	7.14
16670	Thomas M. Rees, North Wharton, Pa	do	1866 and 1867	3.86
16671	Isabella Noss, Nossville, Pa	do	1866 and 1868	30.86
	do	do	1868 and 1870	6.56
16672	Abraham Rice, Numidia, Pa	do	1866 and 1868	23.90
16673	Zadok Gordon, Oak Forest, Pa	do	do	8.28
	do	do	1872 and 1874	10.20
16674	Lucian Wilson, Oakland Mills, Pa	do	do	19.52
16675	H. C. Bosworth, Oceola, Pa	do	1866 and 1868	70.22
16676	Abner Davis, Octoraro, Pa	do	1866	9.86
16677	Samuel Weaver, Old Line, Pa	do	1866 and 1867	2.43
16678	J. V. Collins, Oleopolis, Pa	do	1869 and 1870	48.13
	do	do	1872 and 1874	59.52
16679	I. B. Gifford, Olivia, Pa	do	1866 and 1868	58.22
16680	Theodore B. Selless, Olivet, Pa	do	1870 and 1872	19.71
16681	James W. Holcomb, Orange, Pa	do	1866 and 1868	40.13
	do	do	1868 and 1869	6.04
16682	R. J. Millard, Orangeville, Pa	do	1866 and 1867	27.53
16683	Thomas E. Orbison, Orbisonia, Pa	do	1866 and 1868	211.98
	do	do	1870 and 1872	36.60
16684	George Roth, Orefield, Pa	do	do	22.52
	do	do	1872 and 1874	9.26
16685	Grabell Bear, Oregon, Pa	do	1868 and 1870	11.16
16686	Geo. W. Jones, Ormsby, Pa	do	do	687.84
	do	do	1870 and 1872	334.00
	do	do	1872 and 1874	583.16
16687	J. Bonner, Orrsville, Pa	do	1868 and 1870	93.48
	do	do	1872 and 1873	35.64
16688	Michael Hart, Overbrook, Pa	do	do	81.95
16689	A. L. Witmer, Paradise, Pa	do	1866	27.84
	do	do	1870 and 1872	32.92
16690	James Finley, Paris, Pa	do	1866 and 1868	32.04
	do	do	1868 and 1869	22.25
16691	Carpenter Webb, Parkersville, Pa	do	1866 and 1868	14.36
16692	J. W. Logan, Parnassus, Pa	do	1866 and 1867	34.21
16693	William R. Logan, Parnassus, Pa	do	1869 and 1870	37.00
	do	do	1870	33.26
16694	James E. Lane, Parnassus, Pa	do	1873 and 1874	35.93
16695	George Barrett, Patchinsville, Pa	do	1871 and 1872	2.57
	do	do	1872 and 1874	11.54
16696	John Stackhouse, Penn's Park Pa	do	1871 and 1872	9.96

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16696	John Stockhouse, Penn's Park, Pa	Compensation of postmasters readjusted, etc.	1872	$2.21
16697	Edgar W. Sackett, Penn's Park, Pa	do	1872 and 1874	8.10
16698	Isaac Empfield, Penny Run, Pa	do	1866 and 1868	106.04
	do	do	1870 and 1872	31.08
16699	L. F. Miller, Pennsville, Pa	do	1869 and 1870	28.25
	do	do	1870 and 1872	12.92
	do	do	1872 and 1874	8.00
16700	Isaac Rahn, Perkiomenville, Pa	do	1870 and 1872	26.70
16701	Mary M. Campbell, Perryopolis, Pa	do	1872 and 1874	26.48
16702	J. Patterson, Peru Mills, Pa	do	1866 and 1868	26.64
	do	do	1868 and 1870	7.90
	do	do	1870 and 1872	7.46
	do	do	1872 and 1874	10.82
16703	I. G. Koch, Petersville, Pa	do	1871 and 1872	25.88
	do	do	1872 and 1874	31.10
16704	A. Glenn, Phœnix, Pa	do	1866 and 1867	15.00
16705	Moses King, Pickering, Pa	do	1868 and 1870	42.68
	do	do	1870 and 1872	23.38
	do	do	1872 and 1874	77.00
16706	D. R. Ransom, Pittsfield, Pa	do	1868 and 1870	47.48
	do	do	1872 and 1874	60.28
16707	John M. Kilbourn, Pike Mills, Pa	do	1868 and 1870	7.60
	do	do	1872 and 1873	3.51
16708	Tobias Fox, Pipersville, Pa	do	1870 and 1872	21.90
16709	H. H. Young, Pike Township, Pa	do	1866 and 1868	6.28
16710	J. B. Montgomery, Pike Run, Pa	do	1866 and 1867	18.10
16711	John K. Beidler, Plainfield, Pa	do	1872	211.48
	do	do	1870 and 1872	763.36
16712	David Aston, Plainsville, Pa	do	1873 and 1874	97.26
16713	Abraham Keefer, Pleasant Hall, Pa	do	1868 and 1870	4.06
	do	do	1866 and 1868	5.82
	do	do	1872 and 1873	3.65
16714	I. H. Shelly, Pleasant Valley, Pa	do	1870 and 1872	14.44
16715	Abraham S. Prather, Plumer, Pa	do	1869 and 1870	182.60
	do	do	1872 and 1873	50.29
16716	Washington Alden, Plumer, Pa	do	1869	64.18
16717	M. Frankenfield, Plennsteadville, Pa	do	1869 and 1870	19.44
16718	Jeremiah Wills, Plymouth Meeting, Pa	do	1866 and 1867	11.63
16719	S. M. Housel, Pocahontas, Pa	do	1866 and 1868	12.44
	do	do	1868 and 1870	2.04
	do	do	1870 and 1871	4.88
16720	Noble V. Jackson, Port Allegheny, Pa	do	1868 and 1869	20.70
16721	W. W. McKinney, Port Matilda, Pa	do	1872 and 1874	26.28
	do	do	1870 and 1872	56.56
	do	do	1869 and 1870	18.56
16722	John L. Russell, Port Perry, Pa	do	do	22.92
16723	Joseph Fitzwater, Port Providence, Pa	do	1866	1.28
16724	W. L. Keefer, Porterfield, Pa	do	1870 and 1872	165.90
	do	do	1872 and 1874	10.86
16725	Alexander H. Aiken, Portersville, Pa	do	1868 and 1870	37.98
	do	do	1866 and 1868	137.90
	do	do	1872 and 1874	41.74
	do	do	1871 and 1872	17.74
16726	William Allison, Potter's Mills, Pa	do	1866 and 1868	133.84
16727	Hiram P. Kimball, Potterville, Pa	do	1868	7.77
16728	Wm. Richards, President Furnace, Pa	do	1866 and 1868	245.94
16729	Arthur Prentiss, Prentiss Vale, Pa	do	do	27.72
	do	do	1870 and 1872	12.20
	do	do	1872 and 1874	7.46
16730	Jonas F. Rudy, Progress, Pa	do	1866 and 1868	25.50
16731	Benjamin Witmer, Quarryville, Pa	do	do	79.39
16732	Nathan C. Evans, Rainsburgh, Pa	do	1869 and 1870	8.44
	do	do	1870 and 1872	36.88
16733	W. E. Freeman, Raymond, Pa	do	1869 and 1870	8.28
	do	do	1870 and 1872	3.96
16734	Peter E. Irvine, Rauch's Gap, Pa	do	1868 and 1870	11.76
	do	do	1870 and 1871	5.63
16735	J. R. Reddig, Reamstown, Pa	do	1870	3.77
	do	do	1870 and 1872	22.66
16736	E. N. Stephens, Redstone, Pa	do	1868 and 1870	24.68
	do	do	1870 and 1872	10.52
	do	do	1872 and 1874	32.14
16737	Jesse Reinhold, Reinhold's Station, Pa	do	1868 and 1870	31.22
16738	Milton Fussell, Reeseville, Pa	do	1866 and 1867	17.85
16739	John Seuft, Remington, Pa	do	1866 and 1868	18.80
16740	John M. DeWoody, Reno, Pa	do	1868	37.45
16741	Peter S. Graybill, Richfield, Pa	do	1866 and 1867	7.87
16742	D. G. Shellenberger, Richfield, Pa	do	1867 and 1868	9.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16742	D. G. Shellenberger, Richfield, Pa	Compensation of postmasters readjusted, etc.	1868 and 1869	$15.11
16743	Enoch Shallenberger, Richfield, Pa	do	1872	6.24
16744	Frederick Crouse, Riegelsville, Pa	do	1869 and 1870	93.50
16745	John Fenstermasher, Ringtown, Pa	do	1870 and 1872	131.74
16746	John Lincoln, Rileysville, Pa	do	1866 and 1867	7.66
16747	Emma Hoagland, Roaring Creek, Pa	do	1866	8.13
16748	Francis A. Drake, Rockdale, Pa	do	1867 and 1868	46.39
	do	do	1870 and 1872	73.20
16749	H. M. Davis, Rockland, Pa	do	1866 and 1868	60.88
	do	do	1868 and 1870	27.68
	do	do	1870 and 1872	94.16
	do	do	1872 and 1874	94.68
16750	A. J. Crawford, Rock Point, Pa	do	1868 and 1870	56.49
16751	Perry D. Black, Rohrsburgh, Pa	do	1874	3.13
16752	James B. Curtin, Roland, Pa	do	1870 and 1872	67.26
16753	Joseph Hall, Rose Valley, Pa	do	do	23.42
16754	W. P. Griffith, Rossville, Pa	do	1873 and 1874	8.85
16755	David S. Hassler, Rostraver, Pa	do	1866 and 1868	83.50
	do	do	1870 and 1871	9.08
16756	Bela B. Smith, Rostraver, Pa	do	1870 and 1872	15.14
	do	do	1872 and 1874	10.48
16757	George H. Rowland, Rowland, Pa	do	1866 and 1868	22.41
	do	do	1868 and 1870	15.30
16758	L. Holcomb, Rundell's, Pa	do	1866 and 1868	15.74
	do	do	1868 and 1870	23.34
	do	do	1870 and 1871	12.16
16759	Lewis R. Dunham, Rushville, Pa	do	1866 and 1867	26.67
16760	John Mateson, Russellburgh, Pa	do	1866 and 1868	31.00
16761	Elizabeth O'Neil, Russellville, Pa	do	1866 and 1867	22.58
16762	H. Reigh, Sabbath Rest, Pa	do	1868	10.94
	do	do	1868 and 1870	19.83
16763	E. P. Miller, Saegersville, Pa	do	1866 and 1867	29.21
16764	Sophia R. Miller, Saegersville, Pa	do	1870 and 1871	51.00
	do	do	1869 and 1870	4.59
16765	Samuel J. Kistler, Saegersville, Pa	do	1872	20.40
	do	do	1872 and 1874	141.10
16766	T. O. Reilly, Saint Joseph, Pa	do	1866 and 1868	19.32
	do	do	1868 and 1870	37.12
	do	do	1870 and 1872	8.42
	do	do	1872 and 1874	19.90
16767	H. E. Miller, Salunga, Pa	do	1866 and 1868	25.21
16768	William Holtzworth, Salunga, Pa	do	1868	.75
	do	do	1868 and 1870	37.61
16769	Henry Worst, jr., Salisbury, Pa	do	do	6.52
	do	do	1870 and 1872	2.88
	do	do	1872 and 1874	6.86
16770	George Heckendom, Salt Lick, Pa	do	1866 and 1868	39.98
	do	do	1870 and 1872	15.92
	do	do	1872 and 1874	12.78
16771	Duncan McAllister, Sardis, Pa	do	1866 and 1868	70.30
	do	do	1870 and 1872	12.92
16772	George Berkey, Scalp Level, Pa	do	1866 and 1868	26.66
	do	do	1870 and 1872	9.44
16773	Jacob G. Schwenk, Schwenk's Store, Pa	do	1872 and 1873	10.90
16774	Henry Sleichter, Scotland, Pa	do	1869 and 1870	10.07
16775	Isaac Kolb, Setzler's Store, Pa	do	do	20.81
	do	do	1872 and 1873	23.59
16776	D. C. M. Appleby, Shade Gap, Pa	do	1867	6.21
16777	Samuel Parson, Shade Valley, Pa	do	1872 and 1873	5.24
16778	Jeremiah K. Miller, Shanksville, Pa	do	1867 and 1868	22.57
16779	C. L. Baltzer, Shanksville, Pa	do	1871 and 1872	18.47
16780	Irwine M. Shannon, Shannondale, Pa	do	1866 and 1868	29.72
	do	do	1872 and 1874	41.34
16781	Peleg Burdic, Sharon Centre, Pa	do	1866 and 1868	41.96
	do	do	1870 and 1872	5.08
	do	do	1868 and 1870	14.24
16782	D. W. Wagner, Shartlesville, Pa	do	1866 and 1868	16.78
16783	A. B. Shaw, Shawsville, Pa	do	1870 and 1872	15.42
16784	Andrew Mills, Sheakleyville, Pa	do	1866 and 1868	89.48
	do	do	1868 and 1869	36.46
16785	Mrs. M. E. McCoy, Sheakleyville, Pa	do	1870	12.16
	do	do	1870 and 1872	114.22
16786	George W. Kelly, Shelocta, Pa	do	do	19.54
	do	do	1872 and 1874	23.08
16787	John Swartz, Shepherdstown, Pa	do	1866	21.47
16788	S. R. Coover, Shepherdstown, Pa	do	1871 and 1872	19.11
	do	do	1872 and 1874	20.30
16789	Isaac T. King, Sherman Well, Pa	do	1870 and 1872	39.47

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16790	W. H. Craig, Sherrett, Pa	Compensation of postmasters readjusted, etc.	1872 and 1874	$3.88
10791	Benjamin Steigelman, Shiremanstown, Pa.	do	1866	3.06
16792	Chauncey Thomas, Shohola, Pa	do	1866 and 1868	43.72
16793	E. G. Shoemaker, Shoemaker's, Pa	do	1870 and 1871	7.53
16794	Elias Becker, Shoemakersville, Pa	do	1868 and 1870	28.90
16795	A. J. Engle, Shoemakertown, Pa	do	1866 and 1868	36.58
16796	John Hamilton, Shoustown, Pa	do	1868 and 1870	30.58
	do	do	1870 and 1872	14.74
	do	do	1872 and 1874	7.96
16797	Joseph Elcock, Siddonsburgh, Pa	do	1866 and 1868	57.16
	do	do	1868 and 1870	20.10
	do	do	1870	2.30
16798	H. Howard Hill, Sidelong Hill, Pa	do	1870 and 1871	2.35
16799	Michael Rooney, Silver Creek, Pa	do	1868 and 1869	29.19
16800	Edmund Bunnell, Skinner's Eddy, Pa	do	1866 and 1868	40.18
16801	David Caldwell, Slack Water, Pa	do	1866	2.15
16802	William K. Evans, Stateford, Pa	do	1869 and 1870	5.03
16803	A. D. Johnson, Slate Lick, Pa	do	1872 and 1874	23.20
16804	Thomas Arbuckle, Slifin, Pa	do	do	67.95
16805	George S. Smiley, Smiley, Pa	do	1869 and 1870	5.75
	do	do	1872 and 1873	10.46
16806	Tilghman Seems, Smithport, Pa	do	1866 and 1868	130.60
16807	Jesse Smith, Smith's Ferry, Pa	do	1872 and 1874	170.54
16808	A. M. Forry, Smith's Station, Pa	do	1866	2.61
16809	J. A. Shoemaker, Sonman, Pa	do	1866 and 1868	34.04
16810	Jacob Lorah, Sonestown, Pa	do	1870 and 1872	8.52
16811	William B. Sliper, Souder's Station, Pa	do	do	25.22
16812	Phineas D. Shannon, South Auburn, Pa	do	1869 and 1870	13.16
16813	Samuel Allshouse, South Bend, Pa	do	1866	10.28
16814	James Young, South Easton, Pa	do	1868 and 1869	78.96
16815	G. W. Reagan, South Evansville, Pa	do	1867 and 1868	12.04
16816	Jacob A. Ide, South Warren, Pa	do	1869 and 1870	1.66
	do	do	1870 and 1872	10.94
16817	Myron Dunham, Southwest, Pa	do	1867 and 1868	56.48
	do	do	1870 and 1872	93.58
	do	do	1872 and 1874	36.66
16818	Sol Dorney, South Whitehall, Pa	do	1870 and 1872	6.34
	do	do	1872 and 1873	5.47
16819	Alexander Given, Spang's Mills, Pa	do	1866 and 1867	45.12
16820	Daniel S. Miller, Sporting Hill, Pa	do	1873 and 1874	19.17
16821	William G. Spragg, Spragg's, Pa	do	1870 and 1872	14.76
	do	do	1872	1.52
16822	Archibald McAllister, Springfield Furnace, Pa.	do	1866 and 1868	15.08
	do	do	1870 and 1872	85.52
	do	do	1868 and 1870	22.48
	do	do	1872 and 1874	78.04
16823	E. B. Isett, Spruce Creek, Pa	do	1868	20.45
	do	do	1868 and 1869	32.03
16824	Nathaniel Hagerman, Square Corner, Pa.	do	1866 and 1868	20.40
16825	D. B. Hayde, State Line, Pa	do	1869 and 1870	7.85
	do	do	1872 and 1874	15.89
16826	Emmor S. Jones, Steeleville, Pa	do	1866	2.12
16827	R. H. Laubach, Stembersville, Pa	do	1866 and 1867	.35
16828	Paul Kresge, Stembersville, Pa	do	1866 and 1868	.14
16829	J. E. Burn, Sterrett's Gap, Pa	do	1872	5.71
	do	do	1872 and 1874	284.62
16830	William C. Burrows, Stevensville, Pa	do	1869 and 1870	20.94
16831	Samuel F. Hammond, Stewart's, Pa	do	1868	6.58
16832	Daniel McHenry, Stillwater, Pa	do	1866 and 1868	9.06
	do	do	1872 and 1874	7.42
16833	Philip Sandt, Stockertown, Pa	do	1870 and 1872	12.40
	do	do	1872 and 1874	16.68
16834	Lewis Stall, Stoddartsville, Pa	do	1868 and 1870	13.64
16835	H. Anglemire, Stone Church, Pa	do	1872 and 1874	24.74
	do	do	1870 and 1872	30.88
16836	Elizabeth Hoadley, Stony Fork, Pa	do	1872 and 1873	10.17
	do	do	1866 and 1868	93.58
16837	Franklin Buell, Stony Point, Pa	do	1872	6.50
10838	H. B. Pislee, Stoughstown, Pa	do	1866 and 1868	9.83
16839	N. Buchanan, Strabane, Pa	do	1870 and 1872	42.14
16840	J. M. Corbett, Strattonville, Pa	do	1866 and 1868	114.90
	do	do	1868 and 1869	12.75
16841	Robert Litzinger, Strongstown, Pa	do	1866 and 1868	46.30
	do	do	1868 and 1869	13.40
16842	Josiah Stowell, Sugar Run, Pa	do	1867 and 1868	23.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16842	Josiah Stowell, Sugar Run, Pa	Compensation of postmasters readjusted, etc.	1870 and 1872	$38.82
16843	William H. Moore, Sugar Valley, Pa	do	1866 and 1867	29.39
16844	John Berry, Sugar Valley, Pa	do	1870 and 1872	103.00
	do	do	1872 and 1873	51.21
16845	Mrs. Eliza Irwin, Surgeon's Hall, Pa	do	1866 and 1868	12.70
16846	Laban F. Clark, Susquehanna Depot, Pa.	do	1866 and 1867	180.04
16847	John Brown, Summer Hill, Pa	do	1869 and 1870	14.95
16848	Harlow R. Bryant, Summerville, Pa	do	1866 and 1868	66.42
16849	Jacob Jacoby, Sumneytown, Pa	do	1866 and 1868	25.56
16850	John G. Kirm, Summit Station, Pa	do	1867 and 1868	2.02
16851	John E. Fertig, Summit Station, Pa	do	1866	.68
16852	Jacob Bilhimer, Sybertsville, Pa	do	1867 and 1868	40.70
16853	Rufus L. Perkins, Swan Station, Pa	do	1868 and 1870	14.56
	do	do	1870 and 1872	14.86
	do	do	1872	8.21
	do	do	1866 and 1868	64.12
16854	Alex. Sellers, Telford, Pa	do	1872 and 1874	22.80
16855	Jeremiah Garman, Terre Hill, Pa	do	1866 and 1867	16.14
16856	Nathaniel T. Miller, Terrytown, Pa	do	1866	13.95
16857	Uriah Terry, Terrytown, Pa	do	1867 and 1868	41.85
16858	John Brown, Tinker Run, Pa	do	1873 and 1874	11.87
16859	Richard Ashman, Three Springs, Pa	do	1866 and 1868	135.46
16860	Samuel P. James, Three Tuns, Pa	do	1869 and 1870	22.74
	do	do	1872 and 1874	19.64
16861	J. W. Blandin, Thompson, Pa	do	1866	3.16
16862	Ezra Smedley, Thorndale Iron Works, Pa.	do	1868 and 1869	14.37
16863	I. S. Case, Tobyhanna Mills, Pa	do	1868	10.11
	do	do	1868 and 1869	137.13
16864	George Graves, Tompkinsville, Pa	do	1868	1.30
	do	do	1870 and 1872	23.22
16865	S. M. McClelland, Transfer, Pa	do	do	20.18
16866	Horace Royer, Trappe, Pa	do	1866 and 1868	86.16
16867	Gideon Yoder, Trexlertown, Pa	do	1870 and 1872	85.56
16868	J. M. McIlendry, Troutville, Pa	do	1866	3.11
16869	John Carlisle, Troutville, Pa	do	1872 and 1874	10.80
16870	Anderson Dennis, Turbotville, Pa	do	1866 and 1868	77.80
16871	Lewis A. Turner, Turner's Store, Pa	do	do	38.32
	do	do	1868 and 1878	8.76
	do	do	1870 and 1872	19.06
16872	Wm. L. Hunter, Turtle Creek, Pa	do	1871 and 1874	274.75
16873	Albert Newell, Ulster, Pa	do	1866 and 1867	6.19
16874	John A. Livingston, Union, Pa	do	1866	6.87
16875	James Young, Unityville, Pa	do	1866 and 1868	10.80
	do	do	1870 and 1872	13.90
	do	do	1872	2.28
16876	P. R. Bloom, Upper Darby, Pa	do	1871 and 1872	8.78
	do	do	1872 and 1874	28.28
16877	Ellingford H. Merrimac, Upsonville, Pa.	do	1870 and 1872	11.82
	do	do	1872 and 1873	5.10
16878	George Cook, Upton, Pa	do	1866 and 1868	125.10
16879	Adam Weir, Van Buren, Pa	do	1866 and 1867	3.18
16880	J. L. Scott, Venice, Pa	do	1868 and 1870	24.54
16881	R. B. Rogers, Verona, Pa	do	1867 and 1868	53.07
	do	do	1870 and 1872	72.78
16882	Daniel S. Hiesland, Vincent	do	1866 and 1867	6.92
16883	G. W. Hartz, Wallace, Pa	do	1871 and 1872	28.83
	do	do	1872 and 1873	9.10
16884	J. C. Bailey, Wallsville, Pa	do	1868 and 1869	5.51
16885	Robert Cooper, Warren Centre, Pa	do	1866 and 1868	46.88
16886	Isaac M. Temple, Warsaw, Pa	do	1866 and 1868	38.66
	do	do	1870 and 1872	6.48
16887	Isaac Bradley, Wakefield, Pa	do	1869 and 1870	12.49
16888	Isaac Walker, jr., Walker Mills, Pa	do	1868 and 1870	37.28
16889	S. M. Potter, Wallsville, Pa	do	1869 and 1870	10.82
	do	do	1872 and 1874	11.12
16890	Andrew Ellis, Washingtonville, Pa	do	1867 and 1868	15.42
16891	Wm. Davis, Water Street, Pa	do	1866 and 1868	20.16
	do	do	1867 and 1868	6.10
	do	do	1872 and 1874	15.66
16892	James H. McAlpin, Waverly, Pa	do	1866	7.89
16893	M. W. Bliss, Waverly, Pa	do	1869 and 1870	46.55
16894	William Armbrust, Weaver's Old Stand, Pa.	do	1872 and 1874	11.16
16895	John F. Weida, Weidasville, Pa	do	1866 and 1868	7.70
	do	do	1868 and 1869	1.13
16896	Benneville Smith, Weisenburgh, Pa	do	1868	.62
16897	W. A. Graver, Weissport, Pa	do	do	10.77

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16898	John E. Wells, Wellsville, Pa	Compensation of postmasters readjusted, etc.	1872 and 1874	$104.04
16899	D. W. Henderson, Wesley, Pa	do	1870	3.91
	do	do	1870 and 1872	71.84
	do	do	1872 and 1873	39.60
16900	Elizabeth A. Ray, West Alexander, Pa	do	1866 and 1868	316.56
	do	do	1870 and 1872	52.90
16901	James A. Lacey, West Auburn, Pa	do	1866 and 1868	43.28
16902	Isabella H. Bennington, West Brownsville, Pa	do	1866 and 1867	42.87
16903	Edwin E. Loomis, West Burlington, Pa	do	1866 and 1868	52.26
16904	B. A. Lyon, West Dublin, Pa	do	do	27.50
	do	do	1870 and 1872	11.66
16905	William Peoples, West Fairfield, Pa	do	1866 and 1868	148.78
	do	do	1872 and 1874	42.00
16906	John Burns, West Finley, Pa	do	1868 and 1869	3.65
16907	Samuel Grim, West Finley, Pa	do	1870	1.22
	do	do	1870 and 1872	22.34
16908	Zelotus Fretwell, West Green, Pa	do	1870	2.79
	do	do	1870 and 1872	25.60
16909	Levi Hanna, West Hickory, Pa	do	1868	9.57
16910	Isaac C. Siggins, West Hickory, Pa	do	1868 and 1869	46.50
16911	J. D. Glenn, West Hickory, Pa	do	1870	19.10
	do	do	1872	19.91
16912	Archibald Hill, West Lenox, Pa	do	1868 and 1870	9.40
	do	do	1872 and 1874	4.34
16913	Samuel A. Farber, Westover, Pa	do	1866 and 1868	4.96
	do	do	1868 and 1870	4.08
	do	do	1870 and 1872	9.45
16914	Josiah Deming, West Spring Creek, Pa	do	1870	4.32
16915	William H. Babcock, West Spring Creek, Pa	do	1871 and 1872	12.95
16916	Jesse Plankington, Wexford, Pa	do	1866 and 1868	8.30
16917	M. B. Mitchell, White Ash, Pa	do	do	131.06
	do	do	1868 and 1870	33.96
16918	Jacob Burtis, White's Corners, Pa	do	1866 and 1868	46.16
16919	David Arbuckle, White Deer, Pa	do	do	38.90
	do	do	1872 and 1874	19.68
16920	J. S. McBride, White Hall, Pa	do	1867 and 1868	20.33
16921	D. W. Mandeville, White Mills, Pa	do	1872 and 1874	16.50
16922	Henry Connelly, White Oak, Pa	do	1868	1.18
	do	do	1870 and 1872	13.96
	do	do	1872 and 1874	3.24
16923	A. Sickelsmith, Whiteley, Pa	do	1868 and 1870	5.60
	do	do	1870 and 1872	11.16
	do	do	1872	.70
16924	Jacob A. Harper, Wicomico, Pa	do	1866	20.00
16925	Henry Kendall, Wicomico, Pa	do	1866 and 1868	74.33
	do	do	1868 and 1870	125.70
16926	William K. Mapel, Wiley, Pa	do	do	77.25
16927	David Lucas, Wiley, Pa	do	1870	11.14
	do	do	1870 and 1872	7.26
16928	Fred. Wilmarth, Wilmarth, Pa	do	1869 and 1870	18.27
	do	do	1870 and 1872	97.26
16929	Franklin Stotz, Wind Gap, Pa	do	1866 and 1868	10.60
16930	Phebe Robarts, Williston, Pa	do	do	11.53
16931	William B. Norris, Winterstown, Pa	do	1869	1.93
16932	Richard L. Coulter, Wolf Creek, Pa	do	1868 and 1869	14.81
	do	do	1867 and 1868	39.27
16933	Mrs. Hannah V. Rupert, Wolf Creek, Pa	do	1866 and 1867	36.79
16934	W. P. C. Emery, Wolf Creek, Pa	do	1869 and 1870	14.81
16935	Josiah Holsinger, Woodbury, Pa	do	1866 and 1868	131.99
16936	Alex. J. Thompson, Wrightsville, Pa	do	1866 and 1867	91.33
16937	Henry E. Stiffler, Wurtemburgh, Pa	do	1867 and 1868	47.52
	do	do	1868 and 1869	4.94
16938	William A. Grove, Yellow Creek, Pa	do	1867 and 1868	27.13
	do	do	1868	1.02
16939	David Fluke, Yellow Creek, Pa	do	1869 and 1870	6.06
16940	John Baix, York Furnace, Pa	do	1866 and 1868	74.68
	do	do	1868 and 1870	18.74
	do	do	1870 and 1872	9.82
16941	Johannes Yortz, Yortzville, Pa	do	1868 and 1870	27.28
	do	do	1870 and 1872	9.20
	do	do	1872 and 1874	11.44
16942	Mrs. Mary Rodman, Zion, Pa	do	1866 and 1867	13.28
16943	Samuel Pontius, Zion, Pa	do	1867 and 1868	20.97
16944	Jacob Breisch, Zion Grove, Pa	do	1872 and 1873	11.23
16945	Edmund R. Smith, Zollarsville, Pa	do	1867 and 1868	10.14
16946	Anson Greene, Arcadia, R. I	do	1870 and 1872	11.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16946	Anson Greene, Arcadia, R. I.	Compensation of postmasters readjusted, etc.	1872 and 1874	$26.38
16947	George B. Carpenter, Ashaway, R. I.	do	1866 and 1868	161.18
16948	James H. Angell, Centredale, R. I.	do	do	46.60
	do	do	1868 and 1870	21.40
16949	Walter A. Read, Chepachet, R. I.	do	1870 and 1872	54.56
	do	do	1872 and 1874	69.02
16950	Daniel Whipple, Diamond Hill, R. I.	do	1866 and 1868	31.60
16951	John B. Hazard, Escoheag, R. I.	do	do	10.62
	do	do	1868 and 1870	4.74
16952	Dutre Colvin, Fiskeville, R. I.	do	do	21.28
	do	do	1866 and 1868	34.58
16953	J. G. Cook, Foster, R. I.	do	1872 and 1874	8.66
16954	Henry C. Arnold, Georgiaville, R. I.	do	1866 and 1867	27.39
16955	Henry A. Randall, Harmony, R. I.	do	1871 and 1872	14.31
16956	Daniel Howland, Hope, R. I.	do	do	164.39
16957	Robert Rodman, La Fayette, R. I.	do	1866 and 1868	51.64
	do	do	1870 and 1872	58.24
16958	Daniel Howland, Hope, R. I.	do	1872 and 1874	530.76
16959	Christopher L. Holden, Manton, R. I.	do	1866 and 1868	59.42
	do	do	1870 and 1872	15.76
16960	Prince A. Potter, Mapleville, R. I.	do	1866 and 1868	121.96
	do	do	1868 and 1870	39.60
	do	do	1870 and 1872	30.47
16961	George Legg, Mapleville, R. I.	do	1872	7.19
16962	George K. Viall, Mayatt Point, R. I.	do	1868 and 1870	154.40
	do	do	1870 and 1872	50.42
16963	George K. Tyler, Mount Vernon, R. I.	do	1868 and 1870	6.10
	do	do	1870 and 1872	15.02
	do	do	1872 and 1874	12.66
16964	David Hopkins, Nooseneck Hill, R. I.	do	1866 and 1867	12.27
16965	Edward W. Hazard, Peace Dale, R. I.	do	1866 and 1868	237.78
16966	S. N. Bourne, Pontiac, R. I.	do	1872 and 1874	48.42
16967	Edward F. Dyer, Portsmouth, R. I.	do	1866 and 1868	84.32
	do	do	1870 and 1871	25.32
16968	Josiah I. Gray, Potter Hill, R. I.	do	1868 and 1870	22.62
	do	do	1872 and 1873	11.40
16969	Frederick Cowperthwaite, Quidneck, R. I.	do	1866 and 1868	87.50
16970	Ira Andrews, Rice City, R. I.	do	do	9.60
	do	do	1868	2.22
16971	George A. Cole, Rockland, R. I.	do	1870	4.37
16972	Clarinda P. Battey, South Scituate, R. I.	do	1870 and 1872	12.42
	do	do	1872 and 1874	19.06
16973	Cyrus Arnold, South Foster, R. I.	do	1866 and 1868	25.94
16974	Giles M. Nichols, Summit, R. I.	do	do	32.74
16975	Emily Seabury, Tiverton Four Corners, R. I.	do	do	44.40
16976	Samuel G. Peirce, Tiverton Four Corners, R. I.	do	1872 and 1874	37.05
16977	John F Woodman, Warwick Neck, R. I.	do	1868	4.36
	do	do	1868 and 1870	11.56
	do	do	1871 and 1872	8.71
	do	do	1872	4.73
16978	P. T. Bates, West Greenwich Centre, R. I.	do	1866 and 1868	8.82
	do	do	1868 and 1870	12.36
	do	do	1870 and 1872	9.12
	do	do	1872 and 1874	10.72
16979	Sanders Sisson, Woodville, R. I.	do	1868 and 1870	49.78
16980	Mary Williamson, Anderson, S. C.	do	do	200.41
	do	do	1870 and 1872	158.80
	do	do	1872 and 1874	184.00
16981	M. E. Ambrose, Bishopville, S. C.	do	1871 and 1872	39.23
16982	Margaret P. White, Blairsville, S. C.	do	1870 and 1871	4.70
16983	E. Du Bois, Bluffton, S. C.	do	1870 and 1872	22.06
	do	do	1872 and 1873	7.53
16984	Rebecca Mayfield, Equality, S. C.	do	1868 and 1870	4.26
	do	do	1870 and 1872	20.66
	do	do	1872 and 1874	26.24
16985	James Fletcher, Flat Rock, S. C.	do	1870 and 1872	8.48
16986	Mrs. Millie Stephens, Fair Play, S. C.	do	1868 and 1870	15.58
	do	do	1870 and 1871	14.61
16987	F. E. Wilder, Hilton Head, S. C.	do	1869 and 1870	333.23
	do	do	1870 and 1872	458.79
16988	W. M. Miller, Jefferson, S. C.	do	do	19.28
	do	do	1872 and 1874	9.68
16989	John T. Dent, Leesville, S. C.	do	1872	30.53
	do	do	1870 and 1872	178.32

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
16990	L. P. W. Riser, Liberty Hall, S. C	Compensation of postmasters readjusted, etc.	1870 and 1872	$20.76
	do	do	1872 and 1874	37.82
16991	M. L. Kennedy, Lowndesville, S. C	do	1868 and 1869	11.16
16992	Robert A. Reid, Moffettsville, S. C	do	1870 and 1872	22.08
16993	Mrs. Susan J. Norman, Mush Creek, S. C.	do	1870 and 1871	1.62
16994	Mary E. Hagood, Pickens C. H., S. C	do	1868 and 1870	29.50
16995	John Franz, Port Royal, S. C	do	1868 and 1869	333.23
16996	Hiram Evans, Oro, S. C	do	1871 and 1872	93.24
16997	E. H. Stone, Reboboth, S. C	do	1870 and 1872	6.74
16998	Kasper Goldback, Rossville, S. C	do	do	9.16
16999	Y. James Cooper, Simpson's Mills, S. C.	do	1872 and 1873	3.88
	do	do	1872 and 1874	6.60
17000	Joshua S. Craig, Tylersville, S. C	do	1873 and 1874	4.64
17001	Ransen Phillip, Tumbling Shoals, S. C	do	1870 and 1872	12.86
17002	O. L. Williams, White Pond, S. C	do	1868 and 1869	6.04
17003	J. M. Woolverton, Adamsville, Tenn	do	1870 and 1872	40.68
17004	William B. Wilie, Andrew Chapell, Tenn.	do	do	32.84
	do	do	1872 and 1874	14.98
17005	Willis W. Sanders, Ashland City, Tenn.	do	1868 and 1870	77.64
	do	do	1870 and 1872	77.68
17006	Clisby Austin, Austin Mills, Tenn	do	1868 and 1870	96.58
	do	do	1870 and 1872	41.94
17007	W. G. Inman, Bethel, Tenn	do	do	53.08
	do	do	1872 and 1873	14.63
17008	W. A. Hudson, Bethesda, Tenn	do	1870 and 1872	34.28
	do	do	1872 and 1873	16.88
17009	F. Sturm, Blountsville, Tenn	do	1868	3.30
17010	W. H. Clarke, Bradyville, Tenn	do	1870 and 1872	15.52
	do	do	1872 and 1874	18.42
17011	Joshua G. Perkins, Butler, Tenn	do	1870 and 1872	4.00
17012	Wm. J. Lintz, Caney Branch, Tenn	do	do	11.70
17013	Wm. F. Gibbs, Church Grove, Tenn	do	do	1.72
17014	James Haggard, Clifton, Tenn	do	do	88.74
	do	do	1872 and 1874	66.08
17015	N. J. Peters, Cog Mill, Tenn	do	1870 and 1872	9.04
17016	W. H. Matlock, Cooksville, Tenn	do	1874	7.28
17017	John Lanham, Commerce, Tenn	do	1869 and 1870	4.05
	do	do	1870 and 1872	10.66
17018	S. Melton, Conyersville, Tenn	do	1871 and 1872	28.46
17019	J. P. Drainland, Cumberland Furnace, Tenn.	do	1870 and 1872	60.06
	do	do	1872 and 1874	22.58
17020	H. G. Nichols, Duck River, Tenn	do	do	12.44
17021	Hiram Mann, Durhamville, Tenn	do	1870 and 1872	59.48
	do	do	1872 and 1874	42.70
17022	Russell B. Gosborn, Dyersburgh, Tenn	do	1870 and 1872	138.76
17023	W. T. Tinkle, Dyer Station, Tenn	do	1868 and 1870	54.67
17024	Andrew B. McTeer, Ellejoy, Tenn	do	1872 and 1874	9.46
17025	Dwight V. Culver, Fall Branch, Tenn	do	1868 and 1869	57.28
17026	P. C. Morrison, Fall Branch, Tenn	do	1871 and 1872	43.73
	do	do	1872 and 1874	43.82
17027	Geo. W. Morgan, Fayetteville, Tenn	do	1872 and 1873	147.20
17028	Valentine Gates, Fountain Head, Tenn	do	1870 and 1871	13.14
17029	A. Howden, Fountain Head, Tenn	do	1871 and 1872	22.40
17030	J. J. Wilt, Four Mile Branch, Tenn	do	1870 and 1872	7.42
	do	do	1872 and 1873	1.37
17031	H. H. Richardson, Gadsden, Tenn	do	1870 and 1872	45.18
	do	do	1872 and 1873	34.43
17032	W. T. Hutcheson, Georgetown, Tenn	do	1873	32.81
17033	Nathan Morelock, Graysburgh, Tenn	do	1868	.28
17034	T. A. Cain, Graysburgh, Tenn	do	1868 and 1869	1.39
17035	Harvey Adams, Greene Hill, Tenn	do	1870 and 1872	42.58
17036	Sam'l Burchiel, Gillem's Station, Tenn	do	1869 and 1870	33.23
17037	J. W. Harold, Greeneville, Tenn	do	do	104.65
	do	do	1870 and 1872	292.40
17038	Sam'l D. Cusselburgh, Hale's Point, Tenn	do	do	20.38
17039	W. D. Avent, Hickory Valley, Tenn	do	do	13.26
	do	do	1872 and 1873	10.18
17040	John G. Martin, Hollow Rock, late Sandy Bridge, Tenn.	do	1870 and 1871	50.71
17041	Simeon E. Broyles, Horse Creek, Tenn	do	1868 and 1870	20.96
	do	do	1870 and 1872	35.24
	do	do	1872 and 1874	23.48
17042	Isaac Riseden, Horse Shoe Bend, Tenn	do	1870 and 1872	11.92
17043	Martin Dill, Huntingdon, Tenn	do	1872 and 1873	54.30
17044	Thos. F. Burroughs, Increase, Tenn	do	1868 and 1870	8.74
	do	do	1870 and 1872	15.74

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17044	Thos. F. Burroughs, Increase, Tenn	Compensation of posmasters readjusted, etc.	1872	$0.41
17045	Jas. B. Williams, Juno, Tenn	do	1870 and 1872	21.72
	do	do	1872 and 1874	13.30
17046	John McGuire, Kansas, Tenn	do	1870 and 1872	20.12
	do	do	1872 and 1874	11.56
17047	James Lynn, Kingsport, Tenn	do	1870 and 1872	77.86
	do	do	1872 and 1874	68.90
17048	James K. Wright, Laguardo, Tenn	do	1871 and 1872	41.76
	do	do	1872 and 1874	21.12
17049	Samuel H. Smith, Laurel Hill, Tenn	do	1870	.60
17050	William Greene, Lee Valley, Tenn	do	1870 and 1872	5.40
17051	John S. Fielder, Lexington, Tenn	do	1870	53.92
	do	do	1872 and 1874	1.30
17052	T. P. Goodbur, Livingston, Tenn	do	1871 and 1872	6.02
17053	Newton Dodson, Lobelsville, Tenn	do	1870 and 1872	13.44
	do	do	1872 and 1874	11.86
17054	John Longmier, Longmier, Tenn	do	1870 and 1872	6.96
	do	do	1872 and 1873	1.48
17055	C. C. Carpenter, Lookout Mountain, Tenn.	do	1870 and 1872	109.00
	do	do	1872	6.74
17056	David F. Harrison, Loudon, Tenn	do	1866 and 1868	1,161.86
	do	do	1868 and 1869	24.54
17057	Joseph B. Cummins, Louisville, Tenn	do	1872 and 1874	19.58
17058	Benton T. Peeples, McNairy's Station, Tenn.	do	1868 and 1870	41.91
17059	John J. Franklin, McNairy's Station, Tenn.	do	1870	5.99
	do	do	1870 and 1872	11.38
17060	Thomas Riggs, Manlyville, Tenn	do	do	25.98
	do	do	1872 and 1874	35.16
17061	James W. Branson, Maynardville, Tenn	do	do	36.16
17062	J. E. Jenkins, Middleton Station, Tenn	do	1870 and 1872	45.64
	do	do	1872 and 1874	54.22
17063	B. A. Williamson Milan Depot, Tenn	do	1870 and 1871	293.80
17064	Jesse Armstrout, Mill Brook, Tenn	do	1872 and 1874	9.38
17065	R. D. Ricketts Mount Pleasant, Tenn	do	1868	4.10
17066	E. Rooth, Mount Pleasant, Tenn	do	1869 and 1870	24.60
	do	do	1870	4.72
17067	J. W. Newton, Mount Zion, Tenn	do	1871 and 1872	36.53
17068	L. D. Gilliland, Oak Hill, Tenn	do	1870 and 1872	24.75
17069	W. F. Jones, Oakland, Tenn	do	do	43.30
	do	do	1872 and 1874	16.08
17070	John H. Buck, Oakwood, Tenn	do	do	6.60
17071	J. A. Sewell, Olympus, Tenn	do	1870 and 1872	11.92
17072	Emily Bright, Oregon, Tenn	do	do	8.86
	do	do	1872 and 1874	13.38
17073	T. M. Pierce, Pierce Station, Tenn	do	1870 and 1872	36.52
17074	A. F. Broyles, Pilot Hill, Tenn	do	1872 and 1874	14.10
17075	W. H. Dodd, Poplar Springs, Tenn	do	1871 and 1872	1.42
17076	John W. Stumph, Purdy, Tenn	do	1872	21.48
	do	do	1872 and 1874	65.00
17077	J. A. Collins, Rheatown, Tenn	do	1868 and 1870	49.60
17078	R. H. M. Donnelly, Rheatown, Tenn	do	1872 and 1874	49.26
17079	J. N. Goldman, Rutledge, Tenn	do	1868 and 1869	16.79
17080	Allen S. Tate, Rutledge, Tenn	do	1872	7.63
17081	T. Davy, Saltillo, Tenn	do	1870 and 1872	27.94
	do	do	1872 and 1874	26.30
17082	John Murphy, Sevierville, Tenn	do	1868 and 1869	7.83
17083	D. P. Gass, Sevierville, Tenn	do	1869 and 1870	11.46
	do	do	1872 and 1874	28.96
17084	L. M. N. Cooke, Silver Springs, Tenn	do	1868 and 1870	24.88
17085	J. W. Simmons, Simmons' Bluff, Tenn	do	1872 and 1873	7.21
17086	Willis F. Durham, Spencer, Tenn	do	do	18.09
17087	J. C. Askew, Spring Creek, Tenn	do	1870 and 1871	13.43
17088	W. B. Benson, Smith's X Roads (now Dayton), Tenn.	do	1870 and 1872	16.10
17089	F. M. Turner, Sneedville, Tenn	do	1872 and 1874	31.54
17090	S. B. McIntosh, Stewart, Tenn	do	do	6.30
17091	Edward Pyolt, Sulphur Springs (now Rhea Springs), Tenn.	do	1870 and 1872	27.58
17092	T. R. West, Tampico, Tenn	do	do	34.64
	do	do	1872 and 1874	32.96
17093	Noah J. Wagner, Taylorsville, Tenn	do	1868 and 1869	5.70
17094	Elbert Murphy, Taylorsville, Tenn	do	1869 and 1870	9.20
17095	S. B. McIntosh, Tennessee Ridge, Tenn	do	1870 and 1871	2.08
17096	S. M. Wilson, Tennessee Ridge, Tenn	do	1873 and 1874	8.05
17097	J. W. Shaw, Thomasville, Tenn	do	1870 and 1872	44.10

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17097	J. W. Shaw, Thomasville, Tenn	Compensation of postmasters readjusted, etc.	1872 and 1874	$62.76
17098	Charles E. Lehom, Trade, Tenn	do	1870 and 1872	3.76
17099	Aaron Lewis, Trion, Tenn	do	do	8.32
	do	do	1872 and 1874	5.50
17100	J. E. Johnson, Triune, Tenn	do	do	38.60
17101	G. W. Allison, Union Depot, Tenn	do	1868 and 1869	16.28
17102	D. W. Bruch, Vale Mills, Tenn	do	1871 and 1872	20.22
	do	do	1872 and 1874	7.25
17103	W. D. Wallace, Vervilla, Tenn	do	1868 and 1870	51.12
	do	do	1870 and 1871	5.12
17104	Wm. Wallace, Wallace Cross Roads, Tenn	do	1870 and 1872	16.16
	do	do	1872 and 1873	7.76
17105	John Alley, Walnut Valley, now Dunlap, Tenn.	do	1873 and 1874	4.65
17106	H. D. Gauce, War Gap, Tenn	do	1871 and 1872	17.62
17107	W. N. Waters, Watertown, Tenn	do	1870 and 1872	33.32
	do	do	1868 and 1870	38.94
	do	do	1872 and 1874	27.62
17108	J. I. Jones, Wellwood, Tenn	do	1870 and 1872	23.32
17109	Wm. J. Cordell, Winfield, Tenn	do	1871 and 1872	11.51
	do	do	1872 and 1874	2.56
17110	S. P. Cope, Alum Creek, Tex	do	1869 and 1870	12.47
	do	do	1872	5.99
17111	G. B. Taylor, Bandara, Tex	do	1868 and 1869	15.20
17112	Joseph Heiner, Bandara, Tex	do	1869 and 1870	25.34
17113	Harry S. Webb, Belton, Tex	do	1868 and 1870	179.04
	do	do	1870 and 1871	330.23
17114	Louis Luck, Black Jack Springs, Tex	do	1870 and 1872	6.60
	do	do	1873 and 1874	21.96
17115	Ransom Wheeler, Buena Vista, Tex	do	1870 and 1872	52.74
17116	J. G. O'Grady, Boerne, Tex	do	1868 and 1869	41.64
17117	Julius Glatz, Caney, Tex	do	1868 and 1870	40.26
	do	do	1872 and 1874	30.62
17118	John Vance, Castroville, Tex	do	1870 and 1872	122.04
	do	do	1872	17.72
17119	Z. R. Terrell, Charleston, Tex	do	1872 and 1874	59.20
17120	R. J. Lindsey, Cherino, Tex	do	1870 and 1872	22.70
17121	Christian Kothe, Cherry Springs, Tex	do	1868 and 1870	9.28
	do	do	1870 and 1872	18.62
	do	do	1872 and 1874	10.92
17122	B. C. Williams, Cistern, Tex	do	1871 and 1872	22.52
	do	do	1872 and 1874	14.74
17123	J. P. Underwood, Columbia, Tex	do	1871 and 1872	22.80
17124	M. E. Roberts, Cotton Gin, Tex	do	do	75.20
	do	do	1872 and 1874	60.18
17125	Wm. L. Garvin, Cuthand, Tex	do	1870 and 1872	30.60
17126	Geo. Enderle, Eagle Pass, Tex	do	1868	13.51
17127	Geo. McKay, Eagle Pass, Tex	do	1869 and 1870	67.55
17128	Mary Carpenter, Gainesville, Tex	do	1870 and 1872	126.12
17129	John Baxter, Grand Bluffs, Tex	do	do	37.52
17130	Mrs. A. Neuhaus, Hackberry, Tex	do	do	16.96
17131	Drayton Pratt, Hemphill, Tex	do	1870 and 1871	14.09
17132	D. L. Hendricks, Hickory Hill, Tex	do	1870 and 1872	18.48
	do	do	1872 and 1874	10.06
17133	James Norman, Hockley, Tex	do	1870 and 1872	45.00
	do	do	1872 and 1874	7.80
17134	James Taylor, Hopkinsville, Tex	do	1870 and 1872	34.10
17135	Donald Campbell, Jefferson, Tex	do	1870	222.70
17136	Randol Robinson, Johnson's Station, Tex.	do	1870 and 1872	12.31
17137	Thos. L. Garland, Kickapoo, Tex	do	do	21.82
	do	do	1872 and 1874	22.56
17138	James G. Bell, Knoxville, Tex	do	1872 and 1873	15.45
17139	Jacob Heiser, Liberty, Tex	do	1868 and 1870	142.66
17140	James W. Thomas, McKinney, Tex	do	do	176.52
17141	J. M. Rolings, Macomb, Tex	do	1872 and 1874	30.84
	do	do	1871 and 1872	21.52
17142	John K. Gyle, Matagorda, Tex	do	1868 and 1870	61.78
	do	do	1872 and 1874	38.24
17143	Philip Howard, Meridian, Tex	do	1873 and 1874	93.52
17144	Charles Schneider, Millheim, Tex	do	1870 and 1872	12.80
	do	do	1872 and 1874	14.42
17145	John McDevitt, Morales, Tex	do	1871 and 1872	18.46
	do	do	1872 and 1874	18.66
17146	S. H. Walker, Moulton, Tex	do	1871	14.22
17147	Benjamin Kimmel, Mount Calm, Tex	do	1870 and 1871	5.36
17148	Roland Goering, New Fountain, Tex	do	1868 and 1870	11.10
	do	do	1870	3.06

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17148	Roland Goering, New Fountain, Tex	Compensation of postmasters readjusted, etc.	1872 and 1874	$6.83
17149	Marshall W. Pierson, New Salem, Tex	do	1873 and 1874	27.33
17150	E. G. Didham, Newton, Tex	do	1871 and 1872	14.41
17151	S. H. Matthews, Newton, Tex	do	1871	14.41
17152	E. G. Didham, Newton, Tex	do	1872 and 1874	18.25
17153	Preston W. Hobbs, Nockenut, Tex	do	1871 and 1872	26.58
17154	Henry Boek, Oakland, Tex	do	1870 and 1872	71.78
	do	do	1872 and 1873	71.68
17155	W. M. Lane, Pennington, Tex	do	1870 and 1872	27.55
17156	Henry K. Judd, Petersburgh, Tex	do	1868 and 1870	16.08
	do	do	1870 and 1872	36.20
17157	Martha W. Crawford, Pittsburgh, Tex	do	1872	15.56
	do	do	1872 and 1874	44.42
17158	James H. Martin, Plano, Tex	do	1870 and 1872	202.66
	do	do	1872	24.15
17159	Wm. Sill, Powelton, Tex	do	1870 and 1872	36.94
17160	John Patterson, Rancho, Tex	do	do	36.20
17161	Geo. W. Kemp, Round Mountain, Tex	do	1870 and 1871	16.30
17162	Emile Kellmer, Round Top, Tex	do	1868 and 1869	46.18
17163	G. W. Hawley, Sabin's Pass, Tex	do	1870	15.27
17164	John Ryan, San Patricio, Tex	do	1868 and 1872	11.71
17165	J. W. Miller, Scyene, Tex	do	1868 and 1870	10.34
17166	Elmina Tucker, Simpsonville, Tex	do	1870 and 1871	20.12
17167	Chas. Church, Smithson Valley, Tex	do	1870 and 1872	2.02
17168	Clement Foster, Sweet Home, Tex	do	1870	9.68
	do	do	1870 and 1872	46.94
	do	do	1872 and 1874	42.38
17169	George Bergefield, Valley, Tex	do	1870 and 1872	33.52
17170	John Sheets, Wheelock, Tex	do	1868 and 1869	78.66
17171	E. K. Merrill, White Oak, Tex	do	1872 and 1874	71.72
	do	do	1870 and 1872	66.48
17172	L. E. Harrington, American Fork, Utah	do	1870 and 1872	136.90
17173	William Reeves, Centerville, Utah	do	1866 and 1868	39.94
17174	Henry W. Sanderson, Fair View, Utah	do	1868 and 1870	28.66
17175	Andrew Henry, Fillmore, Utah	do	1870 and 1872	74.72
17176	F. A. Hammond, Huntsville, Utah	do	do	12.74
17177	David Van Wagenen, Midway, Utah	do	1872 and 1874	9.52
17178	David Candland, Mount Pleasant, Utah	do	1872	29.09
17179	Sidney Stevens, North Ogden, Utah	do	1873 and 1874	13.60
17180	Henry Roper, Oak City, Utah	do	1868 and 1870	4.20
	do	do	1870 and 1872	7.90
17181	William W. Sterrett, Paris, Utah	do	1870	2.16
17182	S. S. Smith, Paragonah, Utah	do	1866 and 1868	17.52
17183	David James, Paradise, Utah	do	1870 and 1872	5.92
17184	William Snow, Pine Valley, Utah	do	do	21.40
	do	do	1872 and 1874	20.38
17185	Davis Bartholomew, Statesville, Utah	do	1870 and 1872	5.86
17186	Aaron Johnson, Springville, Utah	do	1868 and 1869	46.83
17187	James S. Cantwell, Smithville, Utah	do	1872 and 1874	32.88
17188	John Steele, Toquerville, Utah	do	1868 and 1870	41.86
17189	William Mangham, Wellsville, Utah	do	1866 and 1867	4.67
17190	Ira Annes, Wellsville, Utah	do	1867 and 1868	4.67
17191	F. A. Cooper, West Jordan, Utah	do	1868 and 1870	3.18
17192	Abner Feltt, jr., Andover, Vt	do	1866 and 1868	30.58
	do	do	1870 and 1872	13.38
17193	G. E. Graham, Bethel, Vt	do	1866 and 1868	184.17
17194	Joseph G. Sargent, Bethel, Vt	do	1868	13.89
17195	John Tinker, Beebe Plain, Vt	do	1870 and 1872	204.92
17196	William Burbank, Bloomfield, Vt	do	1866 and 1868	6.38
	do	do	1868 and 1870	1.62
	do	do	1870 and 1871	1.79
17197	C. B. Williams, Bondville, Vt	do	1866 and 1868	33.70
	do	do	1870 and 1872	24.20
	do	do	1872 and 1874	26.60
17198	Justus Edson, Brookfield, Vt	do	1866 and 1868	66.40
17199	S. L. Nichols, Burke, Vt	do	1866 and 1867	25.10
17200	David Coe, Burke, Vt	do	1867 and 1868	27.73
	do	do	1870 and 1872	14.54
17201	W. S. Eaton, Cambridge, Vt	do	1867 and 1868	70.30
17202	Isaac Glynn, Cambridgeport, Vt	do	1868	13.79
17203	C. F. Glynn, Cambridgeport, Vt	do	1869 and 1870	34.48
	do	do	1872 and 1873	15.34
17204	John B. Bacon, Chelsea, Vt	do	1867 and 1868	110.47
17205	Daniel B. Mervin, Chipman's Point, Vt	do	1870 and 1872	12.18
	do	do	1872 and 1874	10.50
17206	George S. Howard, Concord, Vt	do	1874	1.28
17207	Theodore Cook, Corinth, Vt	do	1866 and 1867	18.60
17208	Hiram W. Chafey, Craftsbury, Vt	do	1867	8.44

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17209	William T. Rublee, East Berkshire, Vt.	Compensation of postmasters readjusted, etc.	1866 and 1868	$48.46
17210	Harmon Morse, East Cambridge, Vt.	do	1868 and 1870	12.40
17211	Stephen Grout, East Dorset, Vt.	do	1870 and 1872	75.40
	do	do	1872 and 1874	71.78
17212	Andrew J. Morse, East Elmore, Vt.	do	1870 and 1872	12.30
17213	A. D. Rollins, East Greensborough, Vt.	do	do	9.04
	do	do	1872 and 1874	13.40
17214	Joseph Purmont, East Georgia, Vt.	do	1872	1.83
17215	Augusta Needham, East Middlebury, Vt.	do	1866 and 1867	15.00
17216	Isaac Glynn, Felchville, Vt.	do	1870	4.21
	do	do	1870 and 1872	49.74
17217	John Bell, Ferrisburgh, Vt.	do	1866 and 1868	33.92
	do	do	1868 and 1870	52.36
	do	do	1870 and 1872	49.00
17218	L. S. French, Franklin, Vt.	do	1866 and 1867	37.17
17219	C. V. Bliss, Georgia, Vt.	do	1867 and 1868	16.55
	do	do	1868 and 1869	17.43
17220	Reuben S. Shepard, Georgia, Vt.	do	1869 and 1870	26.94
	do	do	1872 and 1874	53.18
17221	Jonathan Mathews, Granby, Vt.	do	1866 and 1868	11.83
	do	do	1868 and 1870	10.70
17222	Rodney B. Field, Guilford, Vt.	do	do	115.34
	do	do	1870 and 1872	25.00
	do	do	1872 and 1874	83.66
17223	Lysander M. Billings, Hartland Four Corners, Vt.	do	1868 and 1870	42.52
	do	do	1870 and 1872	58.53
	do	do	1872 and 1874	58.56
17224	Silas Mason, Heartwellville, Vt.	do	1868	2.58
	do	do	1868 and 1870	26.80
	do	do	1870 and 1872	32.92
17225	J. M. Johnson, Huntington, Vt.	do	1866 and 1868	67.03
17226	H. C. Hill, Isle La Motte, Vt.	do	1870	1.30
	do	do	1870 and 1872	33.38
17227	Hiram E. Sawyer, Jamaica, Vt.	do	1867 and 1868	53.91
17228	David Arnold, Londonderry, Vt.	do	1866 and 1868	32.02
17229	Hiram M. Nichols, Lyndon Centre, Vt.	do	1872 and 1874	47.00
17230	Ebenezer Tucker, Marlborough, Vt.	do	1870 and 1872	33.58
17231	Alonzo F. Putnam, Marshfield, Vt.	do	1866 and 1868	36.34
17232	N. R. Spaulding, Moretown, Vt.	do	1870 and 1872	41.62
17233	A. B. Norris, Norrisville, Vt.	do	1869 and 1870	45.71
	do	do	1872 and 1874	33.72
17234	Henderson Blanchard, North Chester, Vt.	do	1866 and 1868	78.50
17235	Daniel P. Chase, North Danville, Vt.	do	do	21.30
17236	W. G. Nye, North Montpelier, Vt.	do	1870 and 1872	10.14
17237	John Hall, North Springfield, Vt.	do	1866 and 1868	38.80
	do	do	1870 and 1872	31.72
17238	W. W. Barnes, North Thetford, Vt.	do	1866 and 1868	133.38
17239	Nathaniel H. Austin, North Tunbridge, Vt.	do	1871 and 1872	33.27
17240	John M. Cushing, Newport, Vt.	do	1866 and 1867	180.09
17241	Jasper C. Baker, Newport, Vt.	do	1869 and 1870	95.20
17242	Oliver P. Simonds, Peru, Vt.	do	1866	10.08
17243	Merritt M. Houghton, Readsborough, Vt.	do	1866 and 1868	14.33
	do	do	1868 and 1870	23.52
17244	Cyrus Temple, Sadanga, Vt.	do	do	12.48
	do	do	1870 and 1872	25.20
17245	H. B. Bottum, Shaftsbury, Vt.	do	1866 and 1868	57.54
17246	Charles E. Willey, Sharon, Vt.	do	1870 and 1872	189.40
17247	William Williams, South Albany, Vt.	do	do	53.37
17248	C. S. Keeler, South Hero, Vt.	do	1868	16.04
	do	do	1868 and 1869	97.73
17249	John L. Pierce, South Londonderry, Vt.	do	1866 and 1868	105.10
17250	W. P. Mattison, South Shaftsbury, Vt.	do	1868	5.11
	do	do	1868 and 1870	116.40
	do	do	1872	24.40
17251	Francis Livingston, South Walden, Vt.	do	1866 and 1868	31.30
	do	do	1870 and 1872	17.18
17252	Asa Smith, South Windham, Vt.	do	1866 and 1868	16.44
	do	do	1870	2.93
17253	F. O. Smith, South Windham, Vt.	do	1873 and 1874	17.59
17254	Roswell Hall, Scranton Junction, Vt.	do	1872	1.43
17255	Warren C. Meserve, Topsham, Vt.	do	1868 and 1870	122.10

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17256	L. P. James, Troy, Vt	Compensation of postmasters readjusted, etc.	1866 and 1867	$145.80
17257	Aaron N. King, Tunbridge, Vt	do	1866 and 1868	88.20
	do	do	1870	27.44
	do	do	1870 and 1872	195.20
17258	John D. Smith, Waterbury Centre, Vt	do	1866 and 1868	40.58
17259	Rufus Harris, West Bolton, Vt	do	1873 and 1874	15.87
17260	Warren Stearns, West Braintree, Vt	do	1866 and 1868	26.28
	do	do	1870 and 1872	29.36
17261	Joseph K. Spaulding, West Bridgewater, Vt.	do	do	24.94
17262	Cyrus Sias, West Derby, Vt	do	1867 and 1868	63.93
	do	do	1870 and 1872	26.18
17263	W. H. Richardson, Westfield, Vt	do	1866 and 1868	44.38
17264	Austin Goodridge, Westminster, Vt	do	1870	28.70
	do	do	1870 and 1872	53.60
17265	Mrs. Tryphena W. Stowell, Westminster West, Vt.	do	1868 and 1870	53.38
17266	C. C. Stearns, West Randolph, Vt	do	1866	102.62
17267	George Spafford, Windham, Vt	do	1866 and 1868	28.28
17268	Siloam Gates, Wolcott, Vt	do	do	63.84
17269	James A. Crockett, Abb's Valley, Va	do	1870 and 1872	12.58
	do	do	1872 and 1874	2.92
17270	W. S. Redd, Abbyville, Va	do	1874	1.02
17271	Mrs. N. W. Panamore, Accomack, Va	do	1866 and 1870	88.95
17272	Nathaniel S. Way, Accotink, Va	do	1873 and 1874	10.76
17273	Francis Lambert, Arcola, Va	do	1874	7.72
17274	Joseph H. Bundy, Beach Spring, Va	do	1870 and 1872	30.20
	do	do	1872 and 1874	14.10
17275	Washington Clark, Bentonville, Va	do	1870 and 1872	31.98
17276	Elbert S. Patterson, Bickley's Mills, Va	do	1870 and 1871	15.44
17277	Lydia F. Lucke, Boydton, Va	do	1872 and 1874	140.73
	do	do	1870 and 1872	61.28
17278	Ann I. Shinner, Brickland, Va	do	do	11.40
17279	John H. Clark, Broad Run Station, Va	do	1871 and 1872	20.09
17280	Robert C. Stover, Broad Run Station, Va	do	1872 and 1874	35.12
	do	do	1872	5.02
17281	W. G. Blane, Bruington, Va	do	1868 and 1870	15.62
17282	Miranda Chappel, Buckland, Va	do	1868 and 1869	15.57
17283	S. L. Chapin, Chantilly, Va	do	1872 and 1874	27.82
17284	Jacob Lerch, Chatterton, Va	do	1868	7.27
17285	William Gatewood, Chilesburgh, Va	do	1872	1.70
17286	Mrs. A. S. Field, Clarksville, Va	do	1868 and 1870	329.40
	do	do	1870 and 1871	42.35
17287	Joseph S. Otis, Clifton, Va	do	1873 and 1874	131.73
17288	Mrs. M. C. Grigg, Curdsville, Va	do	1868 and 1870	36.72
17289	Benjamin M. Cox, Curdsville, Va	do	1872 and 1873	20.75
17290	James M. Dunkum, Diana Mills, Va	do	1870 and 1872	16.30
	do	do	1868 and 1870	5.68
17291	John H. Thompson, Drake's Branch, Va	do	1872 and 1874	28.04
17292	Miss M. E. Powell, Enfield, Va	do	1870 and 1872	17.67
17293	C. S. Heflin, Falmouth, Va	do	1872 and 1874	25.14
	do	do	1870 and 1872	55.66
17294	Charles L. Chappel, Fauquier White Sulphur Springs, Va.	do	1870 and 1871	20.76
17295	A. D. Mann, Blackimore, Va	do	1871 and 1872	2.38
17296	Mrs. Jane Webb, Gladesborough, Va	do	1870 and 1872	2.84
17297	Margaret S. Stevens, Gogginsville, Va	do	1868 and 1870	10.70
	do	do	1870 and 1872	14.88
	do	do	1872 and 1873	14.61
17298	Virginia A. Sharp, Goochland, Va	do	1870 and 1872	71.43
	do	do	1869 and 1870	57.06
17299	Lucy A. Bruce, Greenwood Depot, Va	do	1868 and 1870	292.24
	do	do	1870 and 1872	39.93
17300	T. A. Gillespie, Grundy, Va	do	1873	.51
17301	Ann C. Anderson, Gum Spring, Va	do	1870 and 1871	6.65
17302	John M. Hanford, Guilford Station, Va	do	1871 and 1872	31.18
17303	A. J. Williams, Hallsboro, Va	do	1870 and 1872	7.88
17304	R. R. Graham, Haymarket, Va	do	1868 and 1870	30.06
17305	R. J. Presgraves, Hope Mills, Va	do	1872 and 1873	6.21
17306	J. R. Almond, Hope Mills, Va	do	1873 and 1874	10.34
17307	J. H. Schoolfield, Horse Pasture, Va	do	do	7.42
17308	J. C. Childress, Howardsville, Va	do	1870 and 1871	84.54
17309	Robert C. Pollard, King William, Va	do	1871 and 1872	24.88
17310	W. A. Sledge, Lawrenceville, Va	do	1874	13.34
17311	Isaac Iceman, Lewis Store, Va	do	1872 and 1874	29.84
	do	do	1870 and 1872	18.46
17312	Philip Lockett, Lombard's Grove, Va	do	1872 and 1873	22.76
	do	do	1872	.77

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17313	Sarah A. Powell, Mangohick, Va	Compensation of postmasters readjusted, etc.	1870 and 1872	$6.02
	do	do	1872 and 1873	2.35
17314	David Ferley, Martinsville, Va	do	1869 and 1870	58.93
17315	John H. Brubaker, Massanutton, Va	do	1868 and 1870	5.34
	do	do	1870 and 1872	13.69
17316	Mrs. Mary Scott, Milford, Va	do	1868 and 1870	52.56
17317	A. L. Varner, Mill Gap, Va	do	1870	.78
17318	R. C. Wright, Montague, Va	do	1870 and 1872	35.81
17319	do	do	1872 and 1872	11.64
17320	John A. Varner, Monterey, Va	do	1872	13.36
17321	J. W. Wickham, Montpelier, Va	do	1870 and 1872	26.36
	do	do	1872 and 1873	18.76
17322	Hannah Newton, Montross, Va	do	do	9.18
	do	do	1868 and 1870	41.10
	do	do	1870 and 1872	45.96
17323	Daniel Garber, Moore's Store, Va	do	do	1.35
	do	do	do	10.90
17324	Nicholas G. Rogers, Mount Meridian, Va.	do	1868 and 1870	9.04
17325	Ann J. Shriver, Neersville, Va	do	1871 and 1872	6.12
17326	Major J. Watson, New Church, Va	do	1866 and 1868	27.88
17327	Ellen Drane, New London, Va	do	1870 and 1872	38.72
	do	do	1872 and 1873	13.03
17328	I. E. Thomas, Newsome's Depot, Va	do	1870 and 1872	39.12
	do	do	1868 and 1870	27.68
17329	William R. Snow, Nokesville, Va	do	1869 and 1870	16.99
	do	do	1870 and 1872	64.64
17330	W. McCowan, North Side, Va	do	1872 and 1873	10.17
17331	Alexander Brown, Norwood, Va	do	1871 and 1872	55.13
17332	William Kendall, Paris, Va	do	1870 and 1872	26.88
17333	Samuel Field, Pattonsville, Va	do	1872 and 1873	17.18
	do	do	1870 and 1872	34.34
17334	S. J. Crittenden, Pine View, Va	do	1872 and 1874	21.78
17335	R. C. Perkins, Poindexter Store, Va	do	1871 and 1872	14.68
	do	do	1872 and 1874	68.74
17336	R. P. Burke, Prince Edwards, Va	do	1871 and 1872	66.51
17337	F. E. G. Lindsey, Ravens Nest, Va	do	1868 and 1869	13.16
17338	L. McGuire, Rice's Store, Va	do	1868 and 1870	30.12
	do	do	1870	.90
17339	Elbert S. Thompson, Rose Hill, Va	do	1872 and 1874	15.58
17340	George W. Palmer, Saltville, Va	do	1873 and 1874	73.18
17341	Mary E. Crawford, Seville, Va	do	1871 and 1872	13.20
	do	do	1872	.68
17342	John Taylor, Simmonsville, Va	do	1870 and 1872	6.84
	do	do	1872 and 1874	33.08
17343	Thomas H. Johnson, Slate Mills, Va	do	1873 and 1874	8.52
17344	John W. Hendreck, Spring Mills, Va	do	1872 and 1874	4.30
17345	Sarah Colaw, Strait Creek, Va	do	do	9.06
	do	do	1870 and 1872	10.44
	do	do	1868 and 1870	2.92
17346	David A. Woody, Tappahannock, Va	do	1868	36.64
17347	A. R. Thomas, Thompson's Cross-Roads, Va.	do	1870 and 1872	11.66
	do	do	1872 and 1874	26.92
17348	James M. Trout, Troutsville, Va	do	1870 and 1871	3.27
17349	Frank King, Van Buren Furnace, Va	do	1872 and 1874	8.54
	do	do	1869 and 1870	11.40
17350	W. W. Pollard, Wade's, Va	do	1874	3.01
17351	Mary J. Harris, Warsaw, Va	do	1872 and 1874	32.00
17352	Mrs. R. Williams, White House, Va	do	1870 and 1872	21.04
17353	Charles F. Snow, Wicomico Church, Va	do	1872	1.59
	do	do	1871 and 1872	8.83
17354	W. Mulford, Wilcox Wharf, Va	do	1872 and 1874	74.04
	do	do	1870 and 1872	28.50
17355	Stephen G. Darden, Windsor Station, Va.	do	1868 and 1870	54.14
17356	M. E. Hardy, Yatesville, Va	do	1872	1.48
	do	do	1872 and 1874	28.58
17357	James B. Mitchell, Yorktown, Va	do	1870 and 1871	108.88
17358	Granville O. Haller, Cooperville, Wash	do	1870 and 1872	54.14
17359	Josephus Axtell, Grand Mound, Wash	do	1866 and 1868	9.80
	do	do	1868 and 1870	17.96
	do	do	1870 and 1872	16.74
	do	do	1872 and 1874	10.82
17360	George Gaches, La Conner, Wash	do	1873 and 1874	44.17
17361	James Seavey, Port Townsend, Wash	do	1872 and 1874	120.12
17362	H. E. Johnson, Walla Walla, Wash	do	1868 and 1869	63.56
17363	Alexander Miller, Adaline, W. Va	do	1872 and 1874	.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred	Amount.
17364	W. H. Bishoff, Albright, W. Va	Compensation of postmasters readjusted, etc.	1867 and 1868	$14.01
17365	William A. McNulty, Anderson's Store, W. Va.	do	1866 and 1868	9.66
17366	Joseph H. Coogle, Arnettsville, W. Va.	do	1868 and 1870	11.18
	do	do	1870 and 1872	24.40
	do	do	1872 and 1874	31.46
17367	Jasper Workman, Bald Knob, W. Va	do	1868 and 1870	2.22
17368	James G. West, Barrackville, W. Va	do	do	21.35
17369	Robert Alexander, Beech Hill, W. Va	do	1870 and 1872	45.62
17370	Michael Gardner, Beeler's Station, W. Va	do	1871 and 1872	16.30
	do	do	1872	7.84
17371	W. A. Cooper, Belleville, W. Va	do	1868 and 1870	17.60
	do	do	1872 and 1874	77.44
17372	Richard P. Hosack, Belton, W. Va	do	1866 and 1868	70.19
17373	Selmon Wells, Ben's Run, W. Va	do	do	5.96
	do	do	1868 and 1870	7.94
	do	do	1870 and 1871	3.35
17374	Eli Baker, Beverly, W. Va	do	1869 and 1870	20.58
	do	do	1870 and 1872	28.12
17375	John McCoy, Big Skin Creek, W. Va	do	1868 and 1870	12.78
	do	do	1870 and 1871	3.09
17376	R. McCutchen, Braxton Court-House, W. Va.	do	1869	9.88
17377	T. H. C. Fitzhugh, Bridgeport, W. Va	do	1870 and 1872	58.08
17378	Sardis Cole, Briscoe Run, W. Va	do	1868 and 1870	11.52
	do	do	1866 and 1868	16.46
	do	do	1870 and 1871	6.11
17379	J. R. Smith, Brownstown, W. Va	do	1868	2.67
17380	J. H. Grogan, Brownstown, W. Va	do	1869 and 1870	13.35
	do	do	1872 and 1874	58.78
17381	S. S. Jones, Calhoun, W. Va	do	1868 and 1869	2.15
17382	John W. Davis, Cameron, W. Va	do	1867 and 1868	34.21
17383	William Keely, Cannelton, W. Va	do	1868 and 1869	53.51
17384	B. Waddle, Capon Springs, W. Va	do	1869 and 1870	18.70
17385	O. B. Johnson, Clinton Furnace, W. Va.	do	1866 and 1868	29.74
	do	do	1868 and 1870	2.58
	do	do	1872 and 1874	9.10
17386	Richard H. Lee, Coalsmouth, W. Va	do	1871 and 1872	18.70
17387	O. P. Cox, Cox's Mills, W. Va	do	1866 and 1868	13.12
17388	Jacob Cunningham, Cunningham Mills, W. Va	do	1868 and 1870	4.60
	do	do	1870 and 1872	5.16
	do	do	1872 and 1874	1.76
17389	R. S. Hopkins, Elm Grove, W. Va	do	1866 and 1868	21.02
17390	John W. Feltner, Evansville, W. Va	do	1866 and 1867	9.06
17391	William Turner, Falls of Twelve Pole, W. Va.	do	1866 and 1868	3.88
17392	William L. Doolittle, Fetterman, W. Va.	do	1866	8.78
17393	Franklin Garnes, Fisher's Point, W. Va.	do	1866 and 1868	4.38
	do	do	1868	1.25
17394	George S. Miller, Fisher's Point, W. Va.	do	1868 and 1870	8.75
	do	do	1870 and 1872	10.26
	do	do	1872 and 1874	2.30
17395	Robert Hopkins, Flat Fork, W. Va	do	1871 and 1872	.54
17396	George Adkins, Fort Gay, W. Va	do	1870 and 1872	16.64
17397	L. F. Vintroix, Frazier's Bottom, W. Va.	do	1870	4.09
	do	do	1870 and 1872	50.30
	do	do	1872 and 1874	18.08
17398	D. D. Heavner, Frenchtown, W. Va	do	1869 and 1870	1.06
	do	do	1872	1.25
17399	E. A. McMann, Gap Mills, W. Va	do	1870 and 1872	32.90
	do	do	1872 and 1873	56.84
17400	David Ridenour, German Settlement, W. Va.	do	1866 and 1868	38.48
	do	do	1868 and 1870	15.00
	do	do	1870 and 1872	44.40
	do	do	1872 and 1874	23.00
17401	J. L. Bailey, Grape Island, W. Va	do	1866 and 1868	38.20
17402	Richard Fretwell, Hacker's Creek, W. Va.	do	1867 and 1868	4.63
	do	do	1870 and 1872	2.54
	do	do	1872 and 1874	3.90
17403	John W. Thomas, Hartmonsville, W. Va.	do	1872	9.34
	do	do	do	2.73
17404	William Alkive, Highland, W. Va	do	1868	.96
	do	do	1868 and 1870	1.28
	do	do	1870 and 1871	2.08
17405	Silas McGregor, Highland, W. Va	do	1871 and 1872	2.08

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17405	Silas McGregor, Highland, W. Va	Compensation of postmasters readjusted, etc.	1872 and 1874	$5.76
17406	Newton Poling, Jackson Court House, W. Va.	do	do	31.46
17407	Alpheus Conaway, Joseph's Mills, W. Va.	do	1870 and 1872	17.00
	do	do	1872 and 1874	20.02
17408	J. A. Deeds, Jumping Branch, W. Va	do	1871 and 1872	1.73
	do	do	1872 and 1873	8.81
17409	Henry Hovalton, Kasson, W. Va	do	1866 and 1868	8.15
	do	do	1868 and 1870	3.18
17410	N. H. Triplett, Laurel Iron Works, W. Va.	do	1868	2.06
	do	do	1870 and 1872	22.36
	do	do	1872 and 1874	9.28
17411	J. Milton Taylor, Laurel Point, W. Va	do	1870 and 1872	16.20
	do	do	1872 and 1873	21.72
17412	W. M. Pharea, Leadsville, W. Va	do	1866 and 1868	11.80
17413	Elijah Baker, Leroy, W. Va	do	1872 and 1874	6.42
17414	B. M. Haddox, Little Mills, W. Va	do	1866 and 1868	6.44
17415	Thomas Buchanan, Logan Court House, W. Va.	do	1868 and 1870	16.20
	do	do	1870 and 1872	14.30
	do	do	1872 and 1873	4.67
17416	Lemuel E. Brown, Long Run, W. Va	do	1867 and 1868	3.57
	do	do	1868 and 1869	22.48
17417	Hiram L. Davis, Long Run Station, W. Va.	do	1869 and 1870	32.69
	do	do	1870 and 1872	26.52
	do	do	1872 and 1874	17.04
17418	Thomas Cotterill, Lost River, W. Va	do	1870	2.92
17419	Joseph S. Macher, Macherville, W. Va	do	1866 and 1868	8.44
	do	do	1868 and 1870	17.68
	do	do	1870 and 1872	17.96
	do	do	1872 and 1874	12.74
17420	A. E. Cushman, Maidsville, W. Va	do	1866 and 1868	6.58
17421	George W. Taber, Martinsburgh, W. Va	do	1868	404.65
	do	do	1868 and 1870	361.30
17422	Jacob B. Hager, Milo, W. Va	do	1870 and 1872	16.50
	do	do	1872 and 1873	27.17
17423	Washington Smith, Mole Hill, W. Va	do	1870 and 1872	34.63
17424	David T. Wright, Moore's, W. Va	do	do	1.62
17425	Caroline H. Pullin, Mount Murphy, W. Va.	do	do	5.96
	do	do	1872 and 1874	7.30
17426	Joseph Harmon, Mouth of Seneca, W. Va.	do	1870 and 1872	33.16
	do	do	1872 and 1874	19.16
17427	John Loyd, Muddy Creek, W. Va	do	1868 and 1870	8.09
	do	do	1870 and 1872	5.56
17428	P. C. Barrett, Murphy's Mill, W. Va	do	1873 and 1874	16.55
17429	S. S. Bigley, Murraysville, W. Va	do	1869 and 1870	11.16
	do	do	1870 and 1872	13.63
	do	do	1872 and 1874	12.68
17430	Clarence W. Hampton, Okonoko, W. Va	do	1870 and 1872	40.88
	do	do	1872 and 1873	3.19
17431	H. H. Yonker, Orleans Cross Roads, W. Va.	do	1868 and 1870	42.78
17432	Elizabeth A. Gray, Oxford, W. Va	do	1870 and 1872	25.48
	do	do	1872	.20
17433	E. F. Grant, Philippi, W. Va	do	1871 and 1872	37.31
17434	T. M. Stone, Pine Grove, W. Va	do	1868	7.12
	do	do	1868 and 1870	8.94
	do	do	1870 and 1872	13.20
	do	do	1872	2.24
17435	J. P. R. B. Smith, Point Pleasant, W. Va	do	1866	26.41
17436	L. C. George, Point Pleasant, W. Va	do	1866 and 1867	42.06
17437	Elisha Morgan, Porter's Falls, W. Va	do	1870 and 1872	5.80
17438	Lydia Bond, Quiet Dell, W. Va	do	1866 and 1868	19.72
17439	D. L. Graham, Rathbone, W. Va	do	1869 and 1870	206.40
17440	Madison Vass, Red Sulphur Springs, W. Va.	do	1870 and 1872	87.74
17441	E. R. Woodyard, Reedy Ripple, W. Va	do	1868 and 1870	8.08
	do	do	1870 and 1872	31.18
	do	do	1872 and 1874	15.16
17442	W. F. Johnson, Rosby's Rock, W. Va	do	1866 and 1868	21.76
17443	Henry C. Kitchen, Shanghai, W. Va	do	1872 and 1874	3.99
17444	J. B. Wilson, Short Creek, W. Va	do	1874	3.14
17445	Joseph Funk, Sianesville, W. Va	do	1870 and 1872	20.70

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17445	Joseph Funk, Slanesville, W. Va	Compensation of postmasters readjusted, etc.	1872 and 1874	$9.22
17446	J. R. Hoalotter, Smithville, W. Va	do	1867 and 1868	19.33
17447	L. F. McAllen, South Branch Depot, W. Va.	do	1868 and 1870	35.08
17448	Martin Stump, Sycamore, W. Va	do	1870 and 1872	12.78
17449	Moses C. Kimball, Thornton, W. Va	do	1866 and 1867	46.21
17450	J. C. Painter, Thornton, W. Va	do	1873 and 1874	78.95
17451	John King, Topin's Grove, W. Va	do	1870 and 1872	5.62
17452	J. M. Ball, Upland, W. Va	do	1872 and 1874	10.81
17453	Mary C. Bradley, Valley Bend, W. Va	do	1868 and 1870	4.86
	do	do	1870 and 1872	5.32
	do	do	1872 and 1874	3.12
17454	L. D. Currence, Valley Head, W. Va	do	1868 and 1870	14.12
	do	do	1870 and 1871	5.59
17455	Harmon Conrad, Valley Head, W. Va	do	1871 and 1872	5.59
	do	do	1872 and 1873	8.78
17456	J. R. Hoalotter, Webb's Mills, W. Va	do	1868 and 1870	34.08
	do	do	1872	23.79
17457	J. R. Newton, Webster, W. Va	do	1873 and 1874	13.78
17458	Lafayette Mitchell, West Milford, W. Va.	do	1866 and 1868	21.96
17459	James M. Rice, White Creek, W. Va	do	1868 and 1869	3.84
17460	Joseph Jolliff, White Day, W. Va	do	1866	7.95
17461	John Prichard, White Oak, W. Va	do	1868 and 1870	15.80
	do	do	1870 and 1872	7.20
	do	do	1872 and 1874	18.66
17462	Jeremiah Bailman, Wick, W. Va	do	1866 and 1868	4.57
17463	John Forman, Willey, W. Va	do	1870 and 1872	6.00
	do	do	1872 and 1884	11.56
17464	Thomas D. Burdett, Wolf Creek, W. Va.	do	1874	4.50
17465	William Suter, Woodland, W. Va	do	1868 and 1870	13.56
	do	do	1870 and 1872	17.80
17466	William H. Koon, Worthington, W. Va.	do	do	13.18
	do	do	1872 and 1874	18.84
17467	John D. Rainey, Arcadia, Wis	do	1871 and 1872	9.94
17468	Philip Acker, Ackerville, Wis	do	1866 and 1868	21.42
17469	Jacob Bion, Addison, Wis	do	1866 and 1867	7.17
17470	George D. Dewey, Arcadia, Wis	do	do	6.76
17471	Andrew Anderson, Argyle, Wis	do	1866	32.33
17472	H. A. Owen, Bad Ax, Wis	do	1866 and 1868	20.48
17473	Robert Fletcher, Badger, Wis	do	1866 and 1867	67.63
17474	A. D. Johns, Bay Hill, Wis	do	1872 and 1874	12.20
	do	do	1870 and 1872	12.02
17475	Adam Shamsbaugh, Bear, Wis	do	1868 and 1870	5.34
	do	do	1872 and 1874	4.44
17476	G. W. Bennett, Beldenville, Wis	do	1870 and 1872	3.25
	do	do	1872	1.00
17477	John F. Rich, Beldenville, Wis	do	1873 and 1874	3.01
17478	William Norris, Beldenville, Wis	do	do	14.87
17479	Sylvester Baldwin, Bloomfield, Wis	do	1867 and 1868	59.69
	do	do	1868 and 1869	44.98
17480	S. W. Benson, Bloomfield, Wis	do	1869 and 1870	34.97
	do	do	1870 and 1872	69.36
	do	do	1872 and 1874	102.54
17481	Charles Summicht, Bonduel, Wis	do	1866 and 1867	2.74
17482	Rodney D. Mallory, Buckhorn, Wis	do	1872	3.73
17483	G. W. Lampkin, Bunker Hill, Wis	do	1868	1.97
17484	Samuel Scott, Bunker Hill, Wis	do	1870 and 1872	6.18
	do	do	1869 and 1870	5.91
17485	L. F. Crandall, Burr Oak, Wis	do	1867 and 1868	4.29
	do	do	1870 and 1872	7.56
17486	C. G. Hammerquist, Busseyville, Wis	do	1866 and 1868	28.56
17487	Henry Besse, Butler, Wis	do	1867 and 1868	4.62
	do	do	1868 and 1870	22.18
	do	do	1872 and 1874	20.08
17488	Whitman Brown, Butte des Morts, Wis	do	1870 and 1872	17.86
	do	do	1872 and 1874	13.93
17489	N. M. Sheldon, Caldwell Prairie, Wis	do	1871 and 1872	10.63
17490	Daniel R. Sylvester, Castle Rock, Wis	do	1866 and 1868	62.56
	do	do	1872 and 1874	23.18
17491	F. G. Stanley, Chippewa City, Wis	do	1870 and 1872	103.82
17492	A. F. Shadduck, Clifton Mills, Wis	do	1871 and 1872	3.72
	do	do	1872	1.98
17493	Even T. Wesley, Coon Prairie, Wis	do	1867	7.06
17494	George W. Follett, Coral City, Wis	do	1866 and 1868	29.06
17495	Abner Cory, Coryville, Wis	do	1866 and 1867	4.99
17496	Samuel Tillotson, Cypress, Wis	do	1872	1.47
	do	do	1872 and 1874	4.64
17497	William Green, Dayton, Wis	do	1869 and 1870	18.28

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Am
17497	William Green, Dayton, Wis	Compensation of postmasters readjusted, etc.	1870 and 1872	
17498	William A. Davis, Davis Corners, Wis	do	1866 and 1868	
17499	John Kellmer, Delafield, Wis	do	1866 and 1867	
17500	M. L. Reynolds, Dellona, Wis	do	1872 and 1874	
17501	E. D. Messenger, Dellona, Wis	do	1866 and 1868	
17502	Frank C. Straw, Dell Prairie, Wis	do	1871 and 1872	
17503	Jacob Arinmond, Dundee, Wis	do	1867 and 1868	
17504	Franz Hallensteine, Dundee, Wis	do	1872 and 1874	
17505	Leonard A. Bonny, Eastman, Wis	do	1866 and 1868	
17506	William Wylie, Eau Plaine, Wis	do	do	
17507	John Bredemeyer, Edwards, Wis	do	do	
	do	do	1870 and 1872	
	do	do	1872 and 1874	
17508	Lovell M. Kellogg, Edgerton, Wis	do	1866 and 1868	
	do	do	1868 and 1869	
17509	James McKenzie, Ellenborough, Wis	do	1866 and 1868	
	do	do	1868 and 1870	
17510	Gereshorn P. Breed, Elm Grove, Wis	do	1866 and 1868	
17511	R. Curran, Elm Grove, Wis	do	1868 and 1869	
17512	Joseph Osterle, Ellis, Wis	do	1870 and 1872	
	do	do	1872 and 1873	
17513	H. N. M. Rayner, Enterprise, Wis	do	1870 and 1872	
17514	B. F. Washburn, Excelsior Wis	do	do	
17515	William Thomas, Fairview, Wis	do	1866 and 1868	
	do	do	1868 and 1870	
	do	do	1872 and 1874	
17516	Norman B. Ramsay, Fall City, Wis	do	1873 and 1874	
17517	Elias Aryers, Farmer's Valley, Wis	do	1866 and 1868	
	do	do	1872 and 1874	
17518	Max Bachhuber, Farmersville, Wis	do	1868	
	do	do	1868 and 1870	
	do	do	1870 and 1872	
	do	do	1872 and 1874	
17519	Aaron Walters, Foster, Wis	do	1866 and 1867	
17520	John Udell, Fox River, Wis	do	1871 and 1872	
17521	Edwin Nye, Freedom, Wis	do	do	
17522	Edwin J. Austin, Garden Valley, Wis	do	1866 and 1867	
17523	R. A. Wilson, Georgetown, Wis	do	1872 and 1874	
17524	Frederick Runkel, Germantown, Wis	do	1866 and 1868	
	do	do	1868 and 1870	
17525	James L. Gibbs, Gibbsville, Wis	do	1870 and 1872	
17526	S. C. Lyon, Glendale, Wis	do	1866 and 1868	
	do	do	1868	
17527	James R. Lyon, Glendale, Wis	do	1872	
17528	Ernest Schwager, Golden Lake, Wis	do	1867 and 1868	
17529	Charles Kroker, Good Hope, Wis	do	1866 and 1868	
17530	John B. Eastman, Goole, Wis	do	1867 and 1868	
17531	Adam Deltgen, Granville, Wis	do	do	
17532	Godfrey Krause, Greenfield, Wis	do	1870 and 1872	
17533	Lewis Cooley, Greenville, Wis	do	1866 and 1867	
17534	R. Bowers, Hamlin, Wis	do	1872 and 1874	
	do	do	1869 and 1870	
17535	William Bradley, Hampden, Wis	do	1867	
17536	Orlando A. Stebbins, Harrisville, Wis	do	1872	
17537	Jefferson Crawford, Hazel Green, Wis	do	1866 and 1868	
17538	Leonard Babcock, Herseyville, Wis	do	do	
	do	do	1868 and 1870	
17539	Aaron Clinton, Hixon, Wis	do	1874	
17540	John Bell, Honey Creek, Wis	do	1866 and 1868	
17541	Edward F. Wade, Hooker, Wis	do	1866 and 1867	
17542	Ephraim S. Howe, Howe's Corners, Wis	do	1822	
	do	do	1870 and 1872	
	do	do	1866 and 1868	
17543	Melvin B. Taylor, Hubbleton, Wis	do	1869 and 1870	
	do	do	1870 and 1872	
	do	do	1872 and 1873	
17544	J. S. Allen, Iron Bridge, Wis	do	1870 and 1871	
17545	James S. Spickard, Ithaca, Wis	do	1866 and 1868	
17546	Frank W. Jewett, Jewett Mills, Wis	do	1868 and 1870	
	do	do	1872 and 1874	
17547	M. A. Hunt, Kaukauna, Wis	do	1866 and 1868	
17548	V. Mashek, Kewaunee, Wis	do	1870	
	do	do	1868 and 1870	
	do	do	1868	
17549	W. S. Finley, Kewaunee, Wis	do	1866 and 1867	
17550	Robert Wilson, Kickapoo, Wis	do	1867 and 1868	
17551	A. C. Cushman, Kickapoo, Wis	do	1866	
17552	Gottich Kurth, Kirchhain, Wis	do	1866 and 1867	

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17553	Patrick O'Reilly, Kildare, Wis	Compensation of postmasters readjusted, etc.	1866 and 1868	$135.43
17554	W. H. Stearns, La Fayette, Wis	do	1872 and 1873	3.17
	do	do	1870 and 1872	6.48
17555	George L. Francis, Leicester, Wis	do	1866 and 1868	24.81
17556	George Speed, Lemonwier, Wis	do	1868	13.29
	do	do	1868 and 1870	70.96
	do	do	1872 and 1874	11.24
17557	Hamilton Larrabee, Leroy, Wis	do	1866 and 1867	8.47
17558	J. W. Messer, Leroy, Wis	do	1867 and 1868	17.71
17559	John Neibuhr, Leroy Station, Wis	do	1872 and 1874	13.98
	do	do	1871 and 1874	31.32
17560	James Walsingham, Lime Haven, Wis	do	1866	1.45
17561	David Burnham, Little Lake, Wis	do	1866 and 1868	18.09
17562	M. P. Bishop, Little Prairie, Wis	do	1866	7.62
17563	Edward P. Noyes, Loganville, Wis	do	1871	11.05
17564	S. D. Graves, Loyal, Wis	do	1872 and 1873	49.18
17565	Bradford Hancock, Marshall, Wis	do	1866 and 1868	99.84
	do	do	1868	32.69
17566	Charles Allinger, Marytown, Wis	do	1867 and 1868	6.79
	do	do	1868	6.51
17567	John A. Barney, Mayville, Wis	do	1867 and 1868	51.76
17568	Adolph Zimmerman, Mequon River, Wis.	do	1868	18.32
	do	do	1868 and 1869	72.11
17569	Damon T. Tyler, Merrimack, Wis	do	1870 and 1872	21.36
17570	William Meacher, Midland, Wis	do	1868	1.93
17571	Nathan S. Green, Milford, Wis	do	1866 and 1868	102.80
	do	do	1870 and 1872	25.30
17572	John Ewers, Mill Creek, Wis	do	1871 and 1872	1.23
	do	do	1872 and 1874	10.96
17573	Robert Nelson, Mondovi, Wis	do	1866 and 1868	46.72
	do	do	1870 and 1872	84.48
17574	John Maxwell, Montello, Wis	do	1867 and 1868	50.12
17575	Thomas Eubanks, Montello, Wis	do	1872 and 1874	6.82
17576	Jacob R. Hettman, Moore's Creek, Wis	do	1867 and 1868	3.60
	do	do	1868 and 1869	7.54
17577	Peter Schrage, Morea, Wis	do	do	17.00
17578	George Barrows, Mount Horeb, Wis	do	1867	2.12
17579	John Griffin, Mount Pisgah, Wis	do	1870 and 1872	20.44
17580	Francis M. Payne, Mukwanaga, Wis	do	1866 and 1868	66.96
17581	Solomon Wilkinson, Nanaupa, Wis	do	1870	.45
17582	J. L. Doton, Neenah, Wis	do	1867 and 1868	225.85
17583	Hugo Reuss, Nero, Wis	do	1866 and 1868	16.04
	do	do	1868 and 1870	85.66
	do	do	1870 and 1871	72.90
17584	Frederick M. Fendersen, New Cassel, Wis.	do	1866 and 1868	52.90
17585	Anton Schlegel, New Berlin, Wis	do	1868 and 1870	12.42
	do	do	1870 and 1871	16.20
17586	G. J. Pellegrin, New Franklin, Wis	do	1866	6.09
17587	Thomas H. Smith, New Franklin, Wis	do	1867 and 1868	12.19
	do	do	1868 and 1869	14.50
17588	Osman Caulkins, Newton, Wis	do	1866 and 1868	17.44
17589	B. S. Moore, Newville, Wis	do	1870 and 1872	5.20
17590	C. J. Lambert, North La Crosse, Wis	do	1868 and 1870	62.48
	do	do	1870 and 1871	70.28
17591	Charles Schuchardt, North Lake, Wis	do	1872 and 1873	11.70
	do	do	1870 and 1872	17.26
17592	David Fuller, North Lamartine, Wis	do	1866	6.20
17593	William Addenbrooke, North Prairie Station, Wis.	do	1868	21.03
17594	Delos Hatch, Oakfield Centre, Wis	do	do	7.69
17595	J. W. Messer, Oakfield Centre, Wis	do	1869 and 1870	23.08
	do	do	1872 and 1874	35.00
17596	L. D. Moses, Ogdensburgh, Wis	do	1867 and 1868	22.66
17597	Charles J. Martin, Onalaska, Wis	do	1866	13.08
17598	Riley Jacobs, Ora Oak, Wis	do	1866 and 1868	31.06
17599	Marcus Weed, Orange, Wis	do	do	9.88
17600	Roger Morgan, Osceola, Wis	do	1873 and 1874	1.35
17601	Walter S. Waugh, Oshankuta, Wis	do	1868	1.07
17602	Alexander Paul, Patch Grove, Wis	do	1866 and 1868	124.72
	do	do	1868 and 1870	46.08
	do	do	1870 and 1872	32.08
	do	do	1872 and 1874	46.80
17603	M. B. Axtell, Pepin, Wis	do	1867 and 1868	85.22
	do	do	1868 and 1870	46.62
	do	do	1870 and 1871	25.99
17604	Agodt Sanderson, Perry, Wis	do	do	12.70

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17605	David Parkhurst, Plum City, Wis	Compensation of postmasters readjusted, etc.	1870	$7.76
	do	do	1870 and 1872	15.20
17606	A. L. Moore, Point Bluff, Wis	do	1866 and 1868	70.30
	do	do	1868 and 1869	12.75
17607	S. W. Davis, Point Bluff, Wis	do	1869 and 1870	7.65
17608	James H. Neaville, Potosi, Wis	do	1866 and 1868	68.07
17609	A. P. Bliss, Readstown, Wis	do	do	27.32
	do	do	1872 and 1874	10.50
	do	do	1868 and 1870	6.39
17610	Ernst Schwantz, Reeseville, Wis	do	1870 and 1872	58.83
	do	do	1872	5.54
17611	Harvey Brewer, Roaring Creek, Wis	do	1867 and 1868	4.00
	do	do	1868 and 1870	13.58
17612	Alden Haseltine, Rockbridge, Wis	do	1866 and 1868	25.38
17613	George Black, Rochester, Wis	do	1867 and 1868	26.10
	do	do	1870 and 1872	97.20
17614	Chester D. Combs, Royalton, Wis	do	1866 and 1868	13.72
17615	Valentine Fuller, Rubicon, Wis	do	do	83.36
	do	do	1868 and 1870	37.76
17616	John Stephens, Saint Rose, Wis	do	1870 and 1872	20.06
	do	do	1872 and 1874	20.30
	do	do	1867 and 1868	12.53
17617	Joseph Millikin, Saxeville, Wis	do	1866 and 1868	43.58
17618	Alexander McGiloray, Scotia, Wis	do	do	18.46
17619	Daniel L. Smithurst, Seneca, Wis	do	1868	7.06
	do	do	1868 and 1869	19.50
17620	M. Wescott, Shawano, Wis	do	1867 and 1878	20.25
17621	W. H. Chipperly, Sheridan, Wis	do	1869 and 1870	3.03
	do	do	1872 and 1874	10.26
17622	Ethan B. Farnum, Springfield, Wis	do	1868	4.35
17623	William Heffevnor, Spring Lake, Wis	do	1872 and 1874	26.98
	do	do	1866 and 1868	51.55
17624	John Staats, Staatsville, Wis	do	do	13.26
17625	William H. Kountz, Staffordville, Wis	do	1872	4.53
	do	do	1871 and 1872	41.69
17626	Anson W. De Jean, Star, Wis	do	1868 and 1869	2.28
17627	William H. Nash, Stephensville, Wis	do	1869 and 1870	10.55
17628	Albro Crowell, Stewart, Wis	do	1868	3.24
17629	Nathan Russell, Sugar Creek, Wis	do	1870 and 1871	10.44
17630	William Henthorn, Sylvan, Wis	do	do	8.32
	do	do	1872 and 1874	.42
17631	R. Spink, Taycheedah, Wis	do	1868	6.83
	do	do	1870	6.28
17632	Caroline L. Spink Cook, Taycheedah, Wis.	do	1871	9.42
17633	F. D. Morris, Thompsonville, Wis	do	1866	2.22
17634	Allen McBridge, Tirade, Wis	do	1866 and 1868	4.26
	do	do	1870 and 1872	1.84
	do	do	1872 and 1874	2.40
17635	Christ Nelson, Token Creek, Wis	do	1874	6.26
17636	George Law, Union Church, Wis	do	1867 and 1868	12.20
	do	do	1868 and 1870	3.56
	do	do	1872 and 1874	8.64
17637	Salmon Skinner, Union Farm, Wis	do	1866 and 1868	24.88
17638	Joseph Flich, Verona, Wis	do	1867 and 1868	16.34
	do	do	1870 and 1871	22.55
17639	V. M. Babcock, Wagon Landing, Wis	do	1870 and 1872	6.98
	do	do	1873 and 1874	13.50
17640	Lavinia Stearn, Waitsville, Wis	do	1868 and 1870	222.72
17641	Seth I. Perry, Wakefield, Wis	do	1866 and 1868	8.18
17642	Thomas Buchanan, Warner's Landing, Wis.	do	1867	5.82
17643	Reuben Hurlbut, Waukau, Wis	do	1870 and 1871	27.81
	do	do	1866 and 1868	96.84
17644	T. K. Gray, West Branch, Wis	do	1868 and 1870	37.76
17645	William A. Miller, West Green Lake, Wis.	do	1867 and 1868	3.90
	do	do	1870 and 1872	10.86
	do	do	1872 and 1874	4.26
17646	Cyrus Hill, West Point, Wis	do	1867 and 1868	5.82
	do	do	1870 and 1871	12.00
17647	S. Hasbrook, West Prairie, Wis	do	1868 and 1870	7.92
	do	do	1870 and 1871	2.87
17648	G. L. Hammond, West Rosendale, Wis	do	do	5.65
17649	J. T. Gilpatrick, White Oak Springs, Wis.	do	1866 and 1868	34.18
	do	do	1868 and 1870	15.26
17650	Alex. Prentice, Wishaw, Wis	do	1866 and 1867	1.83

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17651	L. A. Houston, Wood, Wis	Compensation of postmasters readjusted, etc.	1866 and 1868	$14.62
	do	do	1868 and 1870	7.82
	do	do	1870 and 1872	4.06
17652	Nicholas Peters, Woodland, Wis	do	1868	5.02
	do	do	1868 and 1870	54.66
	do	do	1870 and 1872	42.14
	do	do	1872 and 1874	29.71
17653	John Fowler, Yuba, Wis	do	1871 and 1873	4.96
	Total compensation of postmasters readjusted under act of March 3, 1883.			380,321.44

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which the expenditure was incurred.	Amount.
17654	Chesley Faircloth, special carrier, Rountree, Ga.: For services as special carrier from January 1, 1883, to January 31, 1884.	Deficiency in postal revenues, 1885 and prior years.	1884	*$43.42
17655	Thomas Stroud, special carrier, Rountree, Ga.: For services as special carrier from February 1 to June 30, 1884.	do	do	*16.98
17656	D. C. and E. K. Cunningham, subcontractors, route No. 13406, North Carolina:			
	For amount of deductions remitted on account of the fiscal year ended June 30, 1881, per order of the Postmaster-General, dated April 23, 1887.	do	1881	*12.50
	For amount of deductions remitted on account of the fiscal year ended June 30, 1882, per order of the Postmaster-General, dated April 23, 1887.	do	1882	*147.50
	For amount of deductions remitted on account of the fiscal year ended June 30, 1883, per order of the Postmaster-General, dated April 23, 1887.	do	1883	*27.50
				187.50
17657	T. M. Parrish and R. A. Trice, contractors, route 11461, Virginia: For remission of deduction imposed in third quarter, 1882, on account of the fiscal year ended June 30, 1883, per order of the Postmaster-General, dated March 12, 1887.	do	do	*18.75
17658	S. M. Brown, contractor, route No. 31243 Texas: For one month's extra pay allowed by modification of order No. 12570, dated September 3, 1882, decreasing pay $903.55 per annum, modifying order No. 2259, dated February 26, 1887.	do	1882	*75.30
17659	Elijah Osborn, subcontractor, route No. 28228, Missouri: For remission of part of deduction for quarter ended December 31, 1883, per certificate of the Postmaster-General, dated February 12, 1887.	do	1883	*10.19
17660	Chicago and Eastern Illinois Railroad Company, route No. 23080, Illinois: For transportation for deduction remitted September 29, 1887, being a part of the deduction reported on account of failures in first quarter, 1885.	do	1885	*5.28

* In surplus fund.

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17661	Terra Haute and Indianapolis Railroad Company, route No. 22002, Indiana: For remission of deduction in second quarter, 1883, reported to Auditor by letter of D. Hagerty, Acting Second Assistant Postmaster-General, dated September 14, 1887, $211.60; less amount overpaid on account of remission in first quarter, 1883, $6.46, and amount paid on account of remission in second quarter, 1883, $24.60.	Deficiency in postal revenues, 1885 and prior years.	1883	*$180.54
17662	Steamers of Wilkens & Co.: For transporting the United States mails from San Francisco to Tahiti two outward trips on January 29 and May 5, 1884, respectively, per order of the Postmaster-General, No. 1921, February 17, 1887.	do	1884	*9.20
17663	S. S. Stafford, special carrier: For compensation as special carrier at Bane, Va., from January 1 to March 31, 1885.	do	1885	*27.75
17664	Andrew Metheany, special carrier: For compensation as special carrier at Allis, Mich., from April 1 to June 30, 1885.	do	do	*1.47
17665	George Glunz, special carrier: For compensation as special carrier at Chatham, Minn., from March 7 to June 30, 1885.	do	do	*2.67
17666	William Ferguson, postmaster at Oxford, Idaho: For amount of clerk-hire disallowed in second quarter 1882 for want of voucher.	do	1882	*25.00
17667	W. H. Reedish, postmaster at Branchville, S. C.: For clerk-hire under-credited in second quarter, 1885.	do	1885	10.00
17668	John Stafford, late postmaster at Scotland, Dak.: For amount of clerk-hire disallowed in first quarter 1884 for want of voucher.	do	1884	*50.00
17669	Reuben F. Richardson, postmaster at New Martinsville, W. Va.: For clerk-hire under-credited as follows:			
	Third quarter 1883	do	do	9.00
	Fourth quarter 1883			9.00
	First quarter 1884			9.00
	Second quarter 1884			9.00
				*36.00
17671	Reuben T. Richardson, postmaster at New Martinsville, W. Va.: For clerk-hire under-credited in second quarter 1883.	do	1883	*6.92
17672	John H. Smith, special carrier: For amount due for special service at Pate, Ind., from October 1, 1883, to June 30, 1884, per certificate of postmaster on file.	do	1884	*11.67
17673	Amos T. Hecock, postmaster at Beulah, Tex.: For amount paid special carrier for service from January 1 to March 31, 1883, per receipt on file.	do	1883	*4.11
17674	Samuel H. Flemming, mail messenger, North Carolina: For amount allowed under act of Congress approved February 21, 1887, for carrying the mail in 1870, for which no appropriation was provided.	do	1870	†206.66

*In surplus fund.

† Act for relief of Samuel H. Flemming, Stat., Vol. 24, chap. 164, page 904, approved February 21, 1887.

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
17675	George Womeldorff, postmaster, Middleport, Ohio: For amount paid for mail-messenger service from May 14 to June 30, 1883, per orders of the Postmaster-General, No. 11122, dated July 21, 1883, and No. 15524, dated October 8, 1883. Voucher on file. Route No. 83441, Ohio.	Deficiency in postal revenues, 1885 and prior years.	1884	$30.00
17676	L. C. Wood, mail messenger, Colorado: For temporary mail messenger service from October 3 to December 18, 1881, at Conejos, Colo., per orders of the Postmaster-General, No. 3045, dated March 12, 1887, and No. 3886, dated March 31, 1887. Route No. 106085, Colorado.	do	1882	*60.26
17677	Ohio and Mississippi Company, Route No. 23033, Illinois:			
	For remission of deduction June 14, 1887, being a further remission of deduction of $134.60 reported on account of the first quarter 1882.	do	1882	*18.04
	For transportation for deduction remitted June 18, 1887, being a part of deduction of $540.54 reported on account of the first quarter 1883.	do	1883	*356.11
	For transportation deduction remitted June 18, 1887, being the deduction reported on account of the first quarter 1884.	do	1884	*32.77
				406.92
17678	East Tennessee, Virginia and Georgia Railway Company. Route No. 15013, Georgia: For remission of deductions in third quarter 1884, per order of the Postmaster-General dated November 18, 1887.	do	1885	*255.89
17679	East Tennessee, Virginia and Georgia Railway Company. Route No. 49008, Tennessee: For remission of the deduction in third quarter 1884, per order of the Postmaster-General dated November 30, 1887.	do	1885	*51.90
17694	The Plimpton Manufacturing Company and the Morgan Envelope Company:			
	For Departmental office envelopes furnished from January 1 to March 31, 1885, as follows:			
	Nineteen thousand five hundred.			45.82
	Two hundred and sixty-seven thousand.			939.84
	Six thousand			23.40
	Total first quarter 1885	do	1885	*1,009.06
	For Departmental office envelopes furnished from April 1 to June 30, 1885, as follows:			
	Twelve thousand five hundred			29.37
	One hundred forty-three thousand five hundred.			505.12
	Twenty-four thousand five hundred.			95.55
	Total second quarter 1885	do	1885	*630.04
	Total claim			1,639.10
	Total miscellaneous claims for deficiency in postal revenues 1885 and prior years.			3,382.43
	Total scheduled claims allowed by the Sixth Auditor.			383,703.87

*In surplus fund.

C

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 32.

TREASURY DEPARTMENT, Document No. 1073. Secretary—W. E. & A.

CLAIMS ALLOWED BY SIXTH AUDITOR.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Certain claims reported to the Forty-ninth Congress, and not appropriated for, which have been re-examined and allowed by the Auditor of the Treasury for the Post-Office Department.

DECEMBER 22, 1887.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *December* 20, 1887.

SIR: I have the honor to transmit herewith, under the requirements of the act of July 7, 1884 (23 Stat., p. 254), such of the claims heretofore reported in House Ex. Doc. No. 280, Forty-ninth Congress, first session, House Ex. Docs. Nos. 49, 89, 180, and 182, and Senate Ex. Docs. Nos. 110 and 116, Forty-ninth Congress, second session, and not appropriatd for, as have since beeen re-examined and allowed by the Auditor of the Treasury for the Post-Office Department, amounting to $353,099.70.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Estimates for the payment of claims.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8039	K. Kahn, Allentown, Ala	Compensation of postmasters, readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1885 and prior years.	1872 and 1873	$27.87
	do	do	1872	27.83
8040	Mrs. Z. Lassiter, Apple Grove, Ala	do	1872 and 1874	15.10
8041	N. D. McNeill, Arbor Vitae, Ala	do	do	15.26
8042	John H. Nelson Ashville, Ala	do	1868 and 1870	19.96
8043	A. S. Grigg, Auburn, Ala	do	1872 and 1874	379.22
8044	W. H. Robinett, Balm, Ala	do	do	2.43
8045	C. E. Johnson, Bell Factory, Ala	do	1870 and 1872	62.24
	do	do	1872 and 1874	69.90
8046	A. B. Lacy, Berkley, Ala	do	1870 and 1872	10.22
	do	do	1872 and 1874	14.78
8047	W. A Turner, Bladen Springs, Ala	do	do	107.32
8048	Ew. McGaughy, Bridgeport, Ala	do	1871 and 1872	44.78
8049	B. J. Hughes, Bridgeville, Ala	do	1868 and 1870	116.22
	do	do	1870 and 1871	26.82
8050	Jos. J. Gardner, Bridgeville, Ala	do	1871 and 1872	34.56
	do	do	1872 and 1873	49.36
8051	N. B. Leeth, Broomtown, Ala	do	1870 and 1872	1.90
8052	M. L. Stansel, Carrolton, Ala	do	1872 and 1873	54.11
8053	J. T. Wood, Cedar Plains, Ala	do	1870 and 1872	8.48
	do	do	1872 and 1874	6.04
8054	Wade Pippin, Centreville, Ala	do	1870	32.30
8055				
8056	Roswell Poole, Choctaw Corner, Ala	do	1870 and 1872	17.38
8057	Charles T. Williamson, Chulafinne, Ala	do	do	15.10
	do	do	1872 and 1873	46.38
8058	James T. Rusk, Chulafinne, Ala	do	1873 and 1874	48.74
8059	James P. Stelle, Citronelle, Ala	do	1870 and 1872	19.88
8060	J. W. Cotter, Claiborne, Ala	do	1870 and 1871	205.65
8061	Mrs. Laura A. Hubbard, *née* Gregory, Clayton, Ala.	do	1872 and 1873	35.19
8062	Andrew J. Laird, Clayton, Ala	do	1873 and 1874	64.64
8063	F. P. Strother, Clinton, Ala	do	1870 and 1872	49.30
8064	Alfred D. Simmons, Courtland, Ala	do	do	260.10
	do	do	1872 and 1874	85.05
8065	Robert P. Baldwin, Crawford, Ala	do	do	32.26
8066	W. D. McCarty, Daleville, Ala	do	1870 and 1872	23.16
	do	do	1872 and 1873	6.30
8067	R. B. Day, Danville, Ala	do	1870 and 1872	75.92
8068	W. R. Phillips, Dickson, Ala	do	1868 and 1870	24.62
8069	W. G. Thrasher, Dry Creek, Ala	do	1871 and 1872	12.56
8070	A. J. Tidwell, Dublin, Ala	do	1870 and 1872	10.64
8071	Mary E. Taunton, Elba, Ala	do	do	91.21
8072	J. P. Lyle, Eldridge, Ala	do	do	11.10
	do	do	1872 and 1874	15.08
8073	J. E. Westcott, Gaston, Ala	do	1873 and 1874	25.94
8074	M. O. Brien, Georgiana, Ala	do	1868 and 1870	98.36
8075	George W. Powell, Goldville, Ala	do	1872	4.28
	do	do	1872 and 1873	.81
8076	E. G. Chandler, Gravelly Springs, Ala	do	1870 and 1872	28.84
	do	do	1872 and 1874	15.50
8077	William Miller, jr., Greenville, Ala	do	1870 and 1872	219.18
8078	John T. Newcomer, Greenville, Ala	do	1872	64.35
	do	do	1872 and 1874	360.60
8079	Calvin McBrown, Gurleyville, Ala	do	1870 and 1872	54.84
8080	William Campbell, Havana, Ala	do	do	212.42
	do	do	1872 and 1873	95.17
8081	L. G. Wilson, Havana, Ala	do	1873 and 1874	86.61
8082	Mrs. Matha McAdams, Haye's Store, Ala	do	1870 and 1871	6.62
8083	Jesse O. Sharman, Hickory Flat, Ala	do	1870 and 1872	31.38
8084	R. R. Kirby, Hillian's Store, Ala	do	1871 and 1872	8.26
	do	do	1872 and 1873	22.00
8085	Samuel R, May, Howel's Cross Roads, Ala	do	1870 and 1872	16.12
8086	E. A. Jones, Jonesborough, Ala	do	do	45.92
8087	Henn C. Hine, Hennedale, Ala	do	1874	.33
8088	D. C. Savage, Ladiga, Ala	do	1873 and 1874	7.04
8089	J. W. Sandlin, Landersville, Ala	do	1874	1.00
8090	George Lillie, Lawrenceville, Ala	do	1871 and 1872	25.67
8091	William C. Bostic, deceased, Louisville, Ala.	do	1872	16.54
8092	S. M. Finch, Lower Peach Tree, Ala	do	1870 and 1871	80.71
8093	Cecil D. Whitman, Lowndesborough, Ala,	do	1871	7.33
8094	R. T. Gaines, Milltown, Ala	do	1872	.30
8095	Joseph Pappe, Monroeville, Ala	do	1872 and 1874	138.63

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8096	Thomas M. Peters, Moulton, Ala	Compensation of postmasters readjusted, etc.	1868	$23.99
8097	Joseph Riley, Mount Hilliard, Ala	do	1870 and 1872	14.68
	do	do	1872 and 1874	5.18
8098	Samuel H. Radford, Mount Hope, Ala	do	1870 and 1872	19.64
8099	Sarah Ezell, Mount Vernon, Ala	do	do	60.20
8100	N. S. Frolichstein, Newbern, Ala	do	do	31.54
	do	do	1872 and 1873	71.32
8101	James H. Rice, New Hope, Ala	do	1870 and 1872	46.02
	do	do	1872	1.26
8102	James B. Dickey, New Hope, Ala	do	1872 and 1874	17.74
8103	E. W. Griffith, Newton, Ala	do	1869 and 1870	9.78
8104	Samuel T. Palmer, Northport, Ala	do	1872 and 1874	101.92
8105	Q. P. Siler, Orior, Ala	do	1870 and 1872	29.46
	do	do	1872 and 1874	23.46
8106	James H. Garner, Ozark, Ala	do	1871 and 1872	36.89
8107	John B. Pardue, Perryville, Ala	do	do	17.31
8108	A. M. Nash, Pickensville, Ala	do	1872 and 1873	74.31
8109	F. M. Eubanks, Pine Level, Ala	do	1868	10.70
8110	N. D. Wright, Pine Level, Ala	do	1869 and 1870	32.10
	do	do	1870 and 1872	22.50
	do	do	1872	.23
8111	W. J. Hay, Pine Tucky, Ala	do	1870 and 1872	8.02
8112	W. R. Bissell, Portland, Ala	do	1871 and 1872	15.19
	do	do	1872 and 1874	110.90
8113	J. B. Mortimore, Pushmataha, Ala	do	1873 and 1874	81.13
8114	Michael Finney, Russellville, Ala	do	1870 and 1871	30.17
8115	Alonzo Ford, Seal's Station, Ala	do	1870 and 1872	126.06
8116	T. G. Tarrant, Springville, Ala	do	do	33.10
	do	do	1872 and 1873	58.35
8117	James E. Bain, Somerville, Ala	do	1866 and 1868	15.46
8118	J. J. Murphree, Summit, Ala	do	1872 and 1874	35.48
8119	J. H. Gunn, Trinity Station, Ala	do	1872 and 1873	49.73
8120	Charles Womble, Tuscumbia, Ala	do	1870 and 1872	247.78
	do	do	1872 and 1874	166.84
8121	J. K. McDonald, Union Springs, Ala	do	1870 and 1872	293.96
8122	J. H. Houston, Uniontown, Ala	do	1872 and 1873	173.75
8123	Jonathan Collins, Valhermoso Springs, Ala.	do	1868 and 1869	7.49
8124	H. D. Chunn, Valhermoso Springs, Ala	do	1871 and 1872	23.63
8125	W. H. Higginbotham, Village Springs, Ala.	do	1870 and 1872	4.85
8126	M. F. Cornelius, Walnut Grove, Ala	do	do	19.01
8127	L. W. Dean, Walnut Grove, Ala	do	1872	2.72
	do	do	1872 and 1874	36.72
8128	Thomas T. McCorkle, Waterloo, Ala	do	1870 and 1872	26 48
	do	do	1872 and 1874	9.34
8129	W. C. Bulger, sr., Wetumpka, Ala	do	1870 and 1872	408.78
	do	do	1872 and 1874	192.96
8130	Julius H. Adams, Adamsville, Ark	do	1870 and 1872	20.00
8131	Chas. M. Evans, Ash Flat, Ark	do	do	38.74
8132	S. A. Duke, Bartholomew, Ark	do	do	41.98
8133	Nancy H. Newland, Batesville, Ark	do	1868 and 1870	190.82
	do	do	1870 and 1871	65.10
8134	B. F. Davis, Bentonville, Ark	do	1871 and 1872	152.70
8135	J. F. Cheaney, Bernard, Ark	do	do	25.13
8136	B. F. Hobbs, Berryville, Ark	do	1872 and 1874	47.74
8137	H. C. Sadler, Booneville, Ark	do	do	73.01
8138	C. C. Hall, Calhoun, Ark	do	1871 and 1872	5.74
8139	T. P. McGlora, Cane Creek, Ark	do	1870 and 1872	11.24
	do	do	1872 and 1874	13.38
8140	Mrs. Mary E. Hales, Caney, Ark	do	do	28.91
8141	Wm. Marsh, Caney, Ark	do	1874	4.13
8142	E. A. Acruman, Chambersville, Ark	do	1870 and 1874	17.60
	do	do	1872 and 1874	14.10
8143	W. J. Watts, Chocoville, Ark	do	1872 and 1873	16.90
8144	H. S. Martin, Cincinnati, Ark	do	1870 and 1871	80.00
8145	H. Shields, Cincinnati, Ark	do	1871 and 1872	29.04
	do	do	1872 and 1874	60.08
8146	Benjamin Vaughan, Clifty, Ark	do	do	4.38
8147	R. K. Gamble, Crockett's Bluff, Ark	do	1868 and 1870	$1.17
	do	do	1870 and 1872	87.64
8148	M. Jessup, Dardanelle, Ark	do	1872 and 1874	232.92
8149	H. Kirchoff, Dover, Ark	do	1870 and 1872	113.04
	do	do	1872 and 1874	46.66
8150	A. P. Pool, El Paso, Ark	do	do	16.32
8151	W. H. Engles, Farmington, Ark	do	do	34.58
8152	V. E. Williams, Hamburgh, Ark	do	1870 and 1872	109.28
8153	S. C. Law, Hot Springs, Ark	do	1873 and 1874	173.05

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8154	John S. Polk, Huntsville, Ark	Compensation of postmasters readjusted, etc.	1868 and 1870	$188.82
8155	J. D. Lownsbery, La Grange, Ark	do	1870 and 1872	37.98
8156	R. T. Markham, Lewisburgh, Ark	do	1871 and 1872	100.06
8157	L. Torrence, Lyman, Ark	do	1870 and 1871	18.92
8158	Eli D. Hooper, Magazine, Ark	do	1872 and 1874	52.16
8159	J. P. Roberts, Magnolia, Ark	do	1870 and 1872	62.52
	do	do	1872 and 1874	139.54
8160	C. A. P. Horn, Marshall, Ark	do	1871 and 1872	22.89
8161	Edward Schirmer, Mineral Springs, Ark	do	do	55.65
	do	do	1872 and 1873	68.62
8162	B. A. White, Moro, Ark	do	1872 and 1874	16.08
8163	N. B. Price, Mount Adams, Ark	do	1868 and 1870	55.82
	do	do	1870 and 1872	85.16
	do	do	1872 and 1874	65.80
8164	J. N. Craig, Mount Olive, Ark	do	1871 and 1872	11.28
	do	do	1872 and 1873	5.52
8165	J. J. Phillips, New Boggy Depot, Ark	do	1872 and 1874	198.43
8166	J. C. McGuire, Oil Trough, Ark	do	1870 and 1871	67.80
8167	J. O. Blackwood, Osceola, Ark	do	1871 and 1872	24.20
8168	W. R. Kreps, Pitman, Ark	do	1872 and 1874	35.28
8169	T. J. Barnes, Plum Bayou, Ark	do	1870 and 1872	110.22
	do	do	1872 and 1874	36.30
8170	Mrs C. B. Woodworth, Princeton, Ark	do	1870 and 1872	127.66
	do	do	1872 and 1873	34.96
8171	A. J. Ripley, Riggsville, Ark	do	1870 and 1872	18.90
8172	W. H. Rogers, Searcy, Ark	do	1872 and 1874	223.50
8173	C. M. Taylor, South Bend, Ark	do	do	68.58
8174	Thos. D. Hawkins, Springfield, Ark	do	1868 and 1870	27.42
	do	do	1870 and 1872	43.34
8175	O. M. Spellman, Swan Lake, Ark	do	do	52.88
	do	do	1872 and 1874	64.82
8176	N. Williams, Trenton, Ark	do	do	18.32
8177	S. D. Dougherty, Van Buren, Ark	do	1870 and 1872	394.42
8178	A. C. Hodge, Woodlawn, Ark	do	1871 and 1872	1.32
	do	do	1872 and 1874	11.02
8179	Paul Breon, Mohave City, Ariz	do	1873 and 1874	16.38
8180	H. B. Fairfield, Alviso, Cal	do	1868	9.56
8181	Aaron Weil, Amador City, Cal	do	1870 and 1872	57.86
8182	I. T. Carney, Anderson, Cal	do	1871 and 1872	4.26
8183	A. J. Crooks, Angel's Camp, Cal	do	1867 and 1868	52.24
	do	do	1870 and 1872	67.12
	do	do	1872	9.30
8184	Charles Smith, Arcata, Cal	do	1873 and 1874	99.20
8185	John Corbet, Arroyo Grande, Cal	do	1872 and 1874	8.74
8186	George B. Chester, Bakersfield, Cal	do	do	45.48
8187	E. Watermire, Belmont, Cal	do	1868 and 1870	18.28
	do	do	1870 and 1872	40.52
8188	William Ulrich, Big Oak Flat, Cal	do	1868 and 1870	49.30
	do	do	1872 and 1874	16.16
8189	A. F. Bryant, Bridgeport, Cal	do	1870 and 1872	25.88
8190	James L. Hall, Brown's Valley, Cal	do	1872	35.02
8191	Martin Knox, Brownsville, Cal	do	1870 and 1872	13.94
8192	A. J. Gove, Bullard's Bar, Cal	do	1868 and 1870	24.70
8193	Ishmael Monroe, Burwood, Cal	do	do	11.72
	do	do	1870 and 1872	9.06
	do	do	1872 and 1874	10.16
8194	A. Hoffman, Cache Creek, Cal	do	1870 and 1872	27.60
8195	S. Wurtenberg, Calpella, Cal	do	1866 and 1868	29.16
	do	do	1868	.82
8196	N. Zimmerman, Camanche, Cal	do	1870 and 1872	23.10
8197	T. A. Hildreth, Chico, Cal	do	1872 and 1874	294.18
8198	G. S. Long, Clarksville, Cal	do	1869 and 1870	19.34
	do	do	1872 and 1874	42.90
8199	Charles Rhine, Clayton, Cal	do	1870 and 1872	72.48
	do	do	1872 and 1874	18.30
8200	E. H. Pratt, Clipper Mills, Cal	do	1868 and 1870	15.32
8201	Charles Cook, Cloverdale, Cal	do	1868 and 1869	14.81
8202	P. B. Bacon, Columbia, Cal	do	1870 and 1871	88.51
8203	James V. Sims, Courtland, Cal	do	1872 and 1874	8.21
8204	M. Cohern, Danville, Cal	do	1870 and 1872	32.80
8205	W. S. Day, Diamond Springs, Cal	do	1866 and 1868	69.32
8206	H. J. McKinsey, Downieville, Cal	do	1870 and 1872	209.28
8207	Thomas Beacon, Duncan's Mills, Cal	do	1868 and 1870	30.98
8208	Elias Willow, El Dorado, Cal	do	1870 and 1872	86.16
	do	do	1872 and 1874	44.10
8209	James A. Diggles, Etna Mills, Cal	do	1870 and 1872	28.30
8210	Charles H. Henly, Eureka, Cal	do	1868 and 1870	92.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8211	Edward Dennison, Eureka, Cal	Compensation of postmasters readjusted, etc.	1870	$17.86
	do	do	1870 and 1872	144.80
8212	E. J. Dodge, Ferndale, Cal	do	do	20.12
	do	do	1872 and 1874	36.80
8213	R. B. Wight, Fiddletown, Cal	do	1868 and 1870	98.98
8214	Mark Ayer, Folsom City, Cal	do	1868 and 1869	223.65
8215	J. H. Smith, Folsom City, Cal	do	1871 and 1872	79.36
8216	A. H. Cowdin, Forest Hill, Cal	do	1872 and 1874	66.56
8217	Alex. Owens, Fort Jones, Cal	do	1870 and 1872	79.68
8218	William M. Eddy, French Corral, Cal	do	1868 and 1870	63.70
	do	do	1870 and 1872	26.28
8219	R. Filippen, Garden Valley, Cal	do	1872	.66
8220	B. F. Shepherd, Georgetown, Cal	do	1872	13.68
8221	O. F. Ackerly, Goodyear's Bar, Cal	do	1870 and 1872	9.86
8222	James Tannahill, Groveland, Cal	do	do	17.34
	do	do	1872 and 1874	15.76
8223	H. Doolittle, Happy Camp, Cal	do	1868 and 1870	19.29
8224	G. W. Peacock, Harrisburgh, Cal	do	1870 and 1872	14.54
8225	William Hayward, Haywards, Cal	do	do	116.40
	do	do	1872 and 1874	68.00
8226	Edward Donagby, Henley, Cal	do	1869 and 1870	15.68
	do	do	1870 and 1872	16.10
	do	do	1872	4.71
8227	William Goodall, Horsetown, Cal	do	1868 and 1870	83.66
	do	do	1870 and 1872	86.06
8228	Samuel Dewey, Inskip, Cal	do	1870 and 1872	11.54
	do	do	1872 and 1873	8.44
8229	William H. Scudder, Ione Valley, Cal	do	1868 and 1870	43.54
8230	L. N. Breed, Janesville, Cal	do	do	2.80
8231	William C. Caldwell, King's River, Cal	do	1870 and 1872	34.62
8232	S. S. Still, Knight's Ferry, Cal	do	do	89.50
8233	William P. Greenfell, La Grange, Cal	do	do	8.08
8234	George Martin, Lakeport, Cal	do	do	28.07
8235	A. J. Adams, Latrobe, Cal	do	1872 and 1874	36.34
8236	I. E. Paddock, Lexington, Cal	do	1866 and 1868	10.94
	do	do	1872 and 1874	9.98
8237	W. E. Fifield, Linden, Cal	do	1869 and 1870	20.10
	do	do	1870 and 1872	157.10
	do	do	1872 and 1874	81.12
8238	Hiram Willitts, Little Lake, Cal	do	1868 and 1870	10.36
	do	do	1870 and 1872	53.86
8239	Isaiah Stevens, Little River, Cal	do	1872 and 1874	19.14
8240	P. R. Welsh, Longville, Cal	do	1872	3.10
8241	C. H. Merithew, Maine Prairie, Cal	do	1873 and 1874	19.14
8242	William Nelson, Merced Falls, Cal	do	1872 and 1874	26.96
8243	J. F. Fonts, Meridian, Cal	do	1866 and 1868	18.46
	do	do	1868 and 1870	13.64
8244	Otto Froelich, Millerton, Cal	do	1869 and 1870	47.28
	do	do	1870 and 1872	45.08
8245	J. P. Chamberlin, Mission San José, Cal.	do	1878 and 1870	95.32
	do	do	1870 and 1872	118.86
8246	S. Caldwell, Moore's Flat, Cal	do	1868 and 1870	31.02
	do	do	1870 and 1872	71.74
	do	do	1872 and 1874	25.08
8247	Charles Wintzer, Navarro Ridge, Cal	do	do	16.42
8248	Paul N. Harris, Nicolaus, Cal	do	1870 and 1872	38.66
8249	A. O. Wallace, North San Diego, Cal	do	1871 and 1882	21.80
8250	R. B. Sydnor, Oakdale, Cal	do	do	40.88
8251	F. Darneille, Oregon House, Cal	do	do	11.81
8252	W. F. S. Naylor, Oro Fino, Cal	do	1866 and 1868	32.40
8253	H. M. Hale, Pacheco, Cal	do	1868 and 1869	28.32
8254	M. Barthel, Pacheco, Cal	do	1869 and 1870	43.24
8255	N. Crocker, Pass Coblea, Cal	do	1872	8.53
8256	Charles Bishop, Pleasant Grove Creek, Cal.	do	1870 and 1872	4.54
8257	A. P. Harris, Plum Valley, Cal	do	1868 and 1870	23.90
	do	do	1870 and 1871	.87
8258	Corydon Lee, Quincy, Cal	do	1872 and 1874	129.88
8259	John McBride, Rattlesnake Bar, Cal	do	1866 and 1868	9.54
	do	do	1868 and 1869	4.88
8260	J. R. Bradway, Red Bluff, Cal	do	1866 and 1868	212.38
	do	do	1868 and 1869	140.37
8261	W. H. Bahney, Red Bluff, Cal	do	1870 and 1872	135.66
8262	James Gilmore, Rockville, Cal	do	1868 and 1870	60.18
8263	J. P. Coates, Rohnerville, Cal	do	1870 and 1872	18.60
8264	Silas Felker, Santa Cruz, Cal	do	1868 and 1870	127.44

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8265	A. E. Maclay, Saratoga, Cal	Compensation of postmasters readjusted, etc.	1872 and 1873	$70.54
8266	S. Simon, Scott River, Cal	do	1872 and 1874	21.50
8267	A. Bullerdick, Shaw's Flat, Cal	do	1866 and 1868	42.40
8268	William Arma, Sierra Valley, Cal	do	1866 and 1867	41.44
8269	T. H. McFadden, Smartville, Cal	do	1872 and 1874	9.02
8270	James Brooking, Smith River, Cal	do	1870	3.94
	do	do	1870 and 1872	27.24
8271	T. J. Northrup, Sugar Pine, Cal	do	1872 and 1874	12.92
8272	William Menner, Sweetland, Cal	do	1866 and 1868	16.00
	do	do	1868	1.89
8273	Benjamin Wood, Sweetland, Cal	do	1871 and 1872	12.13
8274	W. S. Price, Taylorville, Cal	do	1873 and 1874	63.93
8275	G. W. Hodgkins, Taylorville, Cal	do	1874	17.23
8276	W. Dutton, Tomales, Cal	do	1870 and 1872	71.30
8277	T. J. Compton, West Butte, Cal	do	do	15.86
	do	do	1872 and 1873	2.99
8278	J. M. Cope, West Butte, Cal	do	1873	2.00
8279	J. H. Gratacap, West Point, Cal	do	1866 and 1868	155.34
8280	H. Lohse, Wheatland, Cal	do	1870 and 1872	8.26
8281	J. J. Lindsay, Windsor' Cal	do	do	32.12
8282	B. De La Beckwith, Woodbridge, Cal	do	do	216.29
8283	A. C. Rutledge, Woodbridge, Cal	do	1872	30.89
8284	M. H. Wells, Yankee Hill, Cal	do	1868 and 1870	46.84
8285	G. A. Michaels, Yankee Jim's, Cal	do	do	94.70
	do	do	1870 and 1872	27.34
8286	A. Griffith, Yolo, Cal	do	1868 and 1869	36.33
8287	C. V. Burke, Yolo, Cal	do	1871 and 1872	87.71
8288	C. Lambert, Yountsville, Cal	do	1872 and 1874	59.86
8289	J. C. Owen, Zem Zem, Cal	do	do	8.00
8300	Charles O. Unfrey, Badito, Colo	do	1870	1.48
8301	A. G. Boone, Booneville, Colo	do	1866 and 1868	168.06
8302	J. C. Woodbury, El Paso, Colo	do	1872	12.52
8303	J. W. Drips, Empire City, Colo	do	1869 and 1870	170.16
8384	M. J. Kram, Evans, Colo	do	1871 and 1872	43.53
8305	R. Schmeiding, Fort Garland, Colo	do	do	243.92
8306	A. H. Terrell, Fountain, Colo	do	1869 and 1870	19.64
	do	do	1871 and 1872	20.92
8307	E. H. Gould, Fountain, Colo	do	1872	6.08
8308	Charles Mater, Granite, Colo	do	1871 and 1872	118.60
8309	R. E. Sloan, Larkspur, Colo	do	1872 and 1874	45.66
8310	Charles H. Blair, Lincoln City, Colo	do	1870 and 1872	19.46
	do	do	1872 and 1873	12.24
8311	A. Rist, Namaqua, Colo	do	1872 and 1874	.30
8312	J. W. Ratliff, Nevada, Colo	do	do	120.96
8313	G. P. Wood, Sugar Loaf, Colo	do	do	7.06
8314	Charles E. Bristol, Ansonia, Conn	do	1869 and 1870	122.29
8315	B. C. Kellogg, Avon, Conn	do	1866 and 1868	45.30
8316	Edward Crossman, Bantam's Falls, Conn.	do	do	42.78
	do	do	1870 and 1872	32.94
8317	H. N. Galpin, Berlin, Conn	do	1866 and 1868	179.10
8318	H. W. Rowley, Bloomfield, Conn	do	1868 and 1870	28.86
8319	Henry Alvord, Bolton, Conn	do	1866 and 1868	30.82
8320	S. P. Sumner, Bolton, Conn	do	1870 and 1872	36.63
	do	do	1872 and 1874	32.68
8321	M. Chandler, Burnside, Conn	do	1866 and 1868	28.44
8322	George H. Breinton, Canaan Valley, Conn.	do	1872 and 1874	28.94
8323	R. L. Hawley, Canton, Conn	do	1866 and 1868	35.96
	do	do	1868 and 1869	12.90
8324	J. W. Lincoln, Chaplin, Conn	do	1870 and 1872	57.88
8325	Joseph A. Foote, Colchester, Conn	do	1868	51.63
8326	O. S. Bottsford, Cold Spring, Conn	do	1866 and 1868	27.32
8327	Henry L. Allen, Colebrook, Conn	do	1869 and 1870	34.93
8328	D. T. Fuller, Columbia, Conn	do	1866 and 1868	22.99
8329	John W. Beers, Cornwall, Conn	do	1866 and 1867	26.19
	do	do	1869 and 1870	18.97
8330	S. P. Judson, Cornwall, Conn	do	1867 and 1868	43.64
	do	do	1868 and 1869	18.97
8331	John Isham, Coventry Depot, Conn	do	1868	2.28
8332	T. G. Hodgson, Coventry Depot, Conn	do	1868 and 1870	15.94
	do	do	1870	11.68
8333	E. W. Phillips, Coventry Depot, Conn	do	1871 and 1872	16.26
8334	J. S. Waterbury, Darien, Conn	do	1868 and 1870	79.72
	do	do	1870 and 1872	60.18
8335	S. M. Shipman, Deep River, Conn	do	do	455.34
8336	S. B. Cooper, Durham, Conn	do	1868 and 1869	42.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8337	Mary J. Meigs, Durham Centre, Conn..	Compensation of postmasters readjusted, etc.	1866 and 1868	$59.66
	do	do	1868 and 1870	41.12
	do	do	1870	.72
8338	George H. Davis, Durham Centre, Conn.	do	1870 and 1872	43.36
8339	E. B. Hibbard, Eagleville, Conn	do	1866 and 1868	12.02
8340	W. W. Dowd, East Berlin, Conn	do	1870 and 1872	82.58
	do	do	1872 and 1874	205.06
8341	O. M. Burnham, Eastford, Conn	do	1866 and 1867	14.56
8342	C. Hamlin, East Granby, Conn	do	1872	6.14
8343	D. M. Church, East Haven, Conn	do	1867 and 1868	20.85
	do	do	1868 and 1869	14.51
8344	S. Hemingway, East Haven, Conn	do	1869 and 1870	10.31
	do	do	1870 and 1872	66.36
8345	Isaac Fogg, East Killingly, Conn	do	1869 and 1870	21.06
	do	do	1870 and 1872	73.24
8346	Ezra Parker, East Putnam, Conn	do	1868 and 1870	32.50
	do	do	1870 and 1872	28.12
	do	do	1872 and 1874	139.56
8347	I. L. Scranton, jr., East River, Conn	do	1870 and 1872	68.98
	do	do	1872 and 1874	286.66
8348	S. J. Bartlett, East Windsor, Conn	do	1866 and 1868	13.63
8349	C. Z. Parmelee, East Windsor Hill, Conn.	do	1866 and 1868	73.22
8350	C. F. Peck, Ellsworth, Conn	do	1868 and 1869	3.83
8351	A. Johnson, Enfield, Conn	do	1866 and 1867	20.73
8352	C. B. Wakeley, Fairfield, Conn	do	1870 and 1872	108.46
8353	J. D. Howell, Fair Haven, Conn	do	1866 and 1868	1,235.26
8354	R. H. Cowles, Farmington, Conn	do	1872	23.91
8355	A. B. Smith, Franklin, Conn	do	1866 and 1868	23.26
	do	do	1868 and 1870	29.20
	do	do	1870 and 1872	24.00
	do	do	1872 and 1874	17.38
8356	Isaac Bragaw, Gales Ferry, Conn	do	do	9.86
8357	R. T. Hutchison, Gilead, Conn	do	1866 and 1868	30.84
8358	E. H. Andrews, Glastonbury, Conn	do	1868 and 1870	76.08
8359	John W. Brooks, Goshen, Conn	do	1866	5.86
	do	do	1869 and 1870	62.12
8360	J. E. Brush, Greenwich, Conn	do	1866	21.56
8361	John Dayton, Greenwich, Conn	do	1867 and 1868	69.85
8362	Mrs. T. S. Tillinghast, Griswold, Conn..	do	1868 and 1869	6.51
8363	T. W. Turner, Groton, Conn	do	1866	5.93
8364	E. S. Clark, Haddam, Conn	do	1867 and 1868	98.74
8365	S. H. Lord, Hamburgh, Conn	do	1867	17.04
8366	H. B. Sisson, Hamburgh, Conn	do	1867 and 1868	64.06
	do	do	1868 and 1869	32.35
8367	M. S. Parker, Hamburgh, Conn	do	1869 and 1870	42.87
	do	do	1870	15.23
8368	L. Maria Smith, Hanover, Conn	do	1870 and 1872	58.68
	do	do	1872 and 1874	29.30
8369	P. R. Coe, Hartland, Conn	do	1866 and 1867	12.18
8370	C. G. Tiffany, Hazardville, Conn	do	1868 and 1869	46.89
8371	C. G. Buell, Hebron, Conn	do	1866 and 1868	82.78
	do	do	1868 and 1870	54.86
8372	J. H. Newman, High Ridge, Conn	do	1866 and 1868	46.38
	do	do	1870 and 1872	32.34
8373	D. Fox, Hockanum, Conn	do	1866 and 1867	119.22
8374	R. J. Allen, Hotchkissville, Conn	do	1866 and 1868	41.98
	do	do	1866 and 1870	31.54
8375	James H. Chase, Huntaville Conn	do	1870 and 1872	20.64
8376	Burnett Eaton, Kent, Conn	do	1872 and 1874	76.20
8377	Marcus Wood, Killingly, Conn	do	1869 and 1870	61.84
	do	do	1870 and 1872	234.70
8378	T. L. Norton, Lakeville, Conn	do	1866 and 1868	156.26
8379	George D. Spencer, Lebanon, Conn	do	do	56.56
8380	James McCracken, Ledyard, Conn	do	1866 and 1867	5.14
8381	Miles Beardsley, Long Hill, Conn	do	1868 and 1869	27.49
8382	E. P. Hatch, Manchester, Conn	do	1868 and 1870	122.30
	do	do	1870	15.36
8383	Aaron Cook, Manchester, Conn	do	1870 and 1871	46.08
8384	A. K. Brown, Mansfield Depot, Conn	do	1868 and 1870	30.98
8385	C. B. Morehouse, Marble Dale, Conn	do	1866 and 1868	55.52
	do	do	1868 and 1870	47.95
8386	Isaac Allen, Marlborough, Conn	do	1866 and 1868	41.86
8387	M. H. Kinney, Mashapang, Conn	do	1868 and 1870	8.36
	do	do	1870 and 1872	30.12
	do	do	1872 and 1874	27.30
8388	F. G. Scott, Middlebury, Conn	do	do	38.70
8389	W. J. Beach, Milton, Conn	do	1868 and 1870	12.73

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8390	William A. Clark, Monroe, Conn	Compensation of postmasters readjusted, etc.	1866 and 1868	$62.94
	do	do	1870 and 1872	25.06
8391	L. D. Tompkins, Montville, Conn	do	1872	9.96
	do	do	1872 and 1874	52.46
8392	A. R. Stevens, New Fairfield, Conn	do	1872 and 1873	22.58
8393	Mrs. P. A. Hatch, Newington Junction, Conn.	do	1870 and 1871	82.88
8394	H. C. Caldwell, Newington Junction, Conn.	do	1871 and 1872	50.67
	do	do	1872 and 1874	128.29
8395	W. B. Allen, New Milford, Conn	do	1867 and 1868	133.60
8396	D. Burnham, New Preston, Conn	do	1866 and 1868	119.40
8397	G. P. Thompson, Norfolk, Conn	do	1866	13.16
8398	M. P. Bell, Norfolk, Conn	do	1866 and 1868	153.83
	do	do	1866 and 1869	19.36
8399	John Catlin, Northfield, Conn	do	1868 and 1870	31.69
	do	do	1870 and 1872	80.10
8400	E. C. May, North Woodstock, Conn	do	1872 and 1874	48.44
8401	N. T. Warner, Oakville, Conn	do	1868 and 1870	56.12
	do	do	1870 and 1872	79.94
8402	S. F. Oviatt, Orange, Conn	do	1866 and 1868	15.68
	do	do	1870 and 1872	18.38
8403	S. P. Sanford, Oxford, Conn	do	1866 and 1867	27.60
8404	George A. Adams, Phœnixville, Conn	do	do	12.21
8405	L. P. Norton, Plantsville, Conn	do	1866	20.80
8406	S. H. Norton, Plantsville, Conn	do	1866 and 1868	203.54
8407	H. S. Ives, Plantsville, Conn	do	1872 and 1874	178.36
8408	D. Sanford, Redding Ridge, Conn	do	1866 and 1868	27.90
8409	S. S. Dauchy, Ridgefield, Conn	do	1867 and 1868	105.77
8410	John Partridge, Robertsville, Conn	do	1872 and 1874	39.40
8411	O. C. Knapp, Round Hill, Conn	do	1866 and 1868	73.64
	do	do	1868 and 1870	46.86
	do	do	1870 and 1872	26.50
	do	do	1872 and 1874	46.90
8412	George Hurlbut, Roxbury, Conn	do	1868	39.04
8413	E. L. Stevenson, Saugatuck, Conn	do	1868 and 1869	44.48
8414	J. E. Hubbell, Saugatuck, Conn	do	1869 and 1870	62.40
	do	do	1872 and 1874	55.28
8415	L. S. Johnson, Scitico, Conn	do	do	12.84
8416	William W. Hoag, Sherman, Conn	do	1868	7.94
8417	N. E. Northrup, Sherman, Conn	do	1869 and 1870	23.80
	do	do	1870	4.07
8418	S. E. Keeler, Smith's Ridge, Conn	do	1866	2.13
8419	William L. Brown, Smith's Ridge, Conn	do	1867 and 1868	6.40
	do	do	1868 and 1870	11.46
	do	do	1870 and 1871	4.67
8420	Theodore Arnold, Smith's Ridge, Conn	do	1871 and 1872	4.67
	do	do	1872 and 1873	2.53
8421	A. Bray, South Britain, Conn	do	1866 and 1868	38.06
8422	F. C. Strickland, South Glastonbury, Conn.	do	1866 and 1867	43.23
8423	W. D. Cook, Southington, Conn	do	1868 and 1870	180.76
	do	do	1872 and 1874	327.82
8424	R. L. Chadwick, South Lyme, Conn	do	1866 and 1868	18.52
8425	S. M. Fenner, South Woodstock, Conn	do	1869 and 1870	17.69
8426	G. H. Pinney, Stafford, Conn	do	1866	18.65
8427	C. Harvey, Stafford, Conn	do	1866 and 1868	130.57
8428	Jonathan Finch, Stanwich, Conn	do	do	13.00
	do	do	1868 and 1870	9.20
	do	do	1870 and 1872	23.12
	do	do	1872 and 1874	15.62
8429	I. Burritt, Stepney, Conn	do	1866 and 1868	43.92
	do	do	1866	3.86
8430	William Anderson, Sterling, Conn	do	1870 and 1871	7.13
8431	S. Z. Mattison, Sterling, Conn	do	1871 and 1872	5.35
8432	James Pike, Sterling Hill, Conn	do	1866 and 1868	8.91
	do	do	1868 and 1870	24.70
	do	do	1870 and 1872	15.20
8433	F. Williams, Stonington, Conn	do	1866 and 1868	202.72
8434	H. C. Aborn, Square Pond, Conn	do	do	5.02
	do	do	1872 and 1873	2.15
8435	William Reed, Tariffville, Conn	do	1867 and 1868	28.32
	do	do	1868	56.95
8436	P. B. Coe, Tariffville Conn	do	1869 and 1870	142.38
	do	do	1871 and 1872	60.35
8337	B. H. Hemingway, Terryville, Conn	do	1866 and 1868	147.98
	do	do	1868 and 1870	142.14
	do	do	1870 and 1872	194.42

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
3438	E. T. Yates, Thomaston, Conn	Compensation of postmasters readjusted, etc.	1870 and 1872	$222.64
3439	P. W. Turner, Turnerville, Conn	do	do	14.98
	do	do	1872 and 1873	21.80
3440	W. R. Burnham, Uncasville, Conn	do	1868 and 1869	12.48
3441	Charles Hine, Warren, Conn	do	1866 and 1868	31.04
	do	do	1868 and 1870	65.70
	do	do	1870 and 1872	20.38
3442	A. M. Darrow, Waterford, Conn	do	1866 and 1868	20.34
3443	L. G. Abbe, Waterville, Conn	do	1871 and 1872	38.30
3444	H. A. Atkins, Wauregan, Conn	do	1870 and 1872	80.96
	do	do	1872 and 1874	98.00
3445	Bela E. Hotchkiss, West Cheshire, Conn	do	1869 and 1870	44.63
3446	G. Rogers, West Chester, Conn	do	1868 and 1869	28.18
3447	Samuel Brown, West Chester, Conn	do	1869 and 1870	21.32
3448	H. C. Crandall, West Cornwall, Conn	do	1868	8.98
3449	J. S. Waterbury, West Darien, Conn	do	1872 and 1874	38.24
3450	Charles L. Dean, Westford, Conn	do	1866 and 1868	38.50
3451	E. W. Wilmot, West Haven, Conn	do	1868 and 1870	84.04
3452	A. L. Irner, Westminister, Conn	do	1871 and 1872	12.50
3453	Henry Davis, West Norwalk, Conn	do	1870 and 1872	138.68
	do	do	1872 and 1874	187.30
3454	Mrs. Eliz. A. Campbell, West Suffield, Conn.	do	1866 and 1868	63.70
3455	Ira Johnson, West Willington, Conn	do	1872 and 1874	44.36
3456	J. B. Carpenter, West Willington, Conn	do	1874	6.34
3457	R. F. Marsh, West Winstead, Conn	do	1872 and 1874	530.22
3458	M. L. Dimock, Willington, Conn	do	1866 and 1868	70.70
	do	do	1870 and 1872	27.06
3459	F. L. Loomis, Winchester, Conn	do	1866 and 1868	60.44
3460	W. F. Arnold, Winthrop, Conn	do	do	64.08
	do	do	1868 and 1869	36.70
3461	O. R. Tyler, Wolcottville, Conn	do	1870 and 1872	481.06
3462	W. E. Woodruff, Woodbury, Conn	do	1866 and 1867	68.74
3463	F. A. Walker, Woodbury, Conn	do	1867	45.82
3464	T. P. Leonard, Woodstock, Valley, Conn.	do	1866 and 1868	41.24
	do	do	1868 and 1869	12.67
3465	A. M. Bancroft, Woodstock Valley, Conn.	do	1869 and 1870	21.11
	do	do	1872 and 1874	27.78
3466	M. S. Beeman, Woodville, Conn	do	1866	12.18
3467	W. H. Hibbard, Fairview, Dak	do	1872 and 1874	8.92
3468	E. W. Brenner, Fort Totten, Dak	do	do	320.28
3469	E. W. Walters, Jefferson, Dak	do	1873 and 1874	47.43
3470	Charles Allen, Sioux Falls, Dak	do	1870 and 1872	40.12
3471	Charles H. Manll, Angola, Del	do	1870 and 1872	3.88
3472	Miss E. J. Barton, Angola, Del	do	1872 and 1874	4.25
3473	William H. Money, Blackbird, Del	do	1872 and 1573	4.36
3474	M. B. Steele, Black Water, Del	do	1866 and 1868	38.44
3475	Julia S. Bradley, Canterbury, Del	do	1868 and 1870	50.90
	do	do	1872 and 1874	22.80
3476	William H. Levey, Christiana, Del	do	1866 and 1868	34.06
3477	E. M. Lawson, Claymont, Del	do	1870 and 1872	198.36
3478	William L. Sirmon, Delmar, Del	do	1866 and 1869	50.04
	do	do	1869	20.87
3479	J. H. Bateman, Dover, Del	do	1866 and 1868	246.80
3480	Elijah Register, Drawbridge, Del	do	1869 and 1870	19.56
	do	do	1872 and 1874	66.46
3481	David Johnson, Farmington, Del	do	1868 and 1870	41.54
3482	W. H. Cain, Felton Station, Del	do	1868	20.50
3483	William H. Betts, Gumborough, Del	do	1866 and 1868	23.74
	do	do	1870 and 1872	9.30
	do	do	1872 and 1874	17.60
3484	John H. Vangessel, Harrington, Del	do	1870 and 1872	70.66
	do	do	1872 and 1873	39.47
3485	John C. Thompson, Harbeson, Del	do	1872 and 1874	9.44
3486	Peter Carnagy, Hares' Corners, Del	do	1867 and 1868	6.10
	do	do	1868 and 1870	17.10
	do	do	1870 and 1872	42.70
	do	do	1872 and 1874	80.20
3487	J. H. Johnson, Haslettville, Del	do	1866	12.20
3488	James Green, Haslettville, Del	do	1867 and 1868	18.31
	do	do	1870 and 1872	16.26
3489	J. M. Downes, Haslettville, Del	do	1872	2.32
3490	John Wood, Henry Clay Factory, Del	do	1866 and 1868	100.86
	do	do	1872 and 1874	28.56
3491	R. C. Prettyman, Hollyville, Del	do	1866 and 1868	2.86
	do	do	1868 and 1870	5.58

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8491	B. C. Prettyman, Hollyville, Del	Compensation of postmasters readjusted, etc.	1870 and 1872	$9.12
	do	do	1872 and 1874	5.60
8492	J. N. Wilds, Kenton, Del	do	1866	3.44
8493	W. C. Jump, Kenton, Del	do	1867 and 1868	20.66
8494	William H. Moore, Kenton, Del	do	1870 and 1872	105.02
8495	James A. Benson, Kirkwood, Del	do	1868	11.44
8496	Z. F. Harris, Kirkwood, Del	do	1870	14.83
8497	J. A. Reeves, Leipsic, Del	do	1866	9.66
8498	H. M. How, Leipsic, Del	do	1867 and 1868	29.00
8499	H. C. Maull, Lewes, Del	do	1866 and 1868	72.58
8500	Lucy H. W. Jackson, Lincoln, Del	do	1868 and 1870	87.77
8501	William H. Hobson, Little Creek Landing, Del.	do	1870 and 1872	17.40
8502	J. B. Cannon, Lowes Cross Roads, Del	do	1869 and 1870	6.86
8503	Z. A. Pool, McDonough, Del	do	1866 and 1868	25.40
	do	do	1868 and 1870	52.82
8504	Ann C. Finsthwait, Magnolia, Del	do	1870 and 1872	79.44
8505	Milton Steele, Mermaid, Del	do	1866 and 1868	3.84
8506	George F. Burton, Millsborough, Del	do	1872 and 1874	40.96
8507	T. I. Atkins, Milton, Del	do	1866 and 1868	68.46
8508	J. Drennan, Newark, Del	do	do	153.30
8509	Joseph Hall, Ocean View, Del	do	1868 and 1870	29.18
8510	Joseph H. Thomas, Pearson's Corners, Del.	do	1866 and 1868	5.26
	do	do	1872 and 1874	2.04
8511	A. Buckingham, jr., Pleasant Hill, Del	do	1866 and 1868	8.38
	do	do	1868 and 1870	9.66
	do	do	1870 and 1872	18.14
8512	James A. Evans, Redden, Del	do	do	7.58
8513	George C. Webb, Saint George, Del	do	1866	25.09
8514	R. P. Tawsesey, Saint George, Del	do	1866 and 1868	175.61
8515	William G. Davis, Selbyville, Del	do	1868 and 1870	37.74
8516	R. W. Mulford, Summit Bridge, Del	do	1866 and 1868	18.42
8517	William C. Quillen, Vernon, Del	do	1871 and 1872	4.98
	do	do	1872	.89
8518	Henry Blair, Bellville, Fla	do	1872 and 1874	30.14
8519	E. L. Ware, Key West, Fla	do	1870 and 1872	376.02
	do	do	1872 and 1874	1,344.94
8520	W. F. Moore, Madison, Fla	do	1869	124.98
8521	Alfred Osgood, Madison, Fla	do	1869 and 1872	250.24
8522	Ozias Budington, Middleburgh, Fla	do	1872 and 1874	9.16
8523	C. A. Cowgill, Orange Mills, Fla	do	1870 and 1872	18.20
	do	do	1872	6.74
8524	E. W. Speir, Orlando, Fla	do	1871 and 1872	15.56
8525	W. C. Snow, Palatka, Fla	do	1870 and 1872	217.80
	do	do	1872 and 1873	150.19
8526	William L. Daniels, Port Orange, Fla	do	1871 and 1872	4.94
	do	do	1872 and 1874	27.42
8527	C. Slager, Tampa, Fla	do	1871 and 1872	68.10
8528	M. C. Robinson, Vernon, Fla	do	1870 and 1872	21.72
	do	do	1872 and 1874	54.96
8529	Madison Dodd, Alpharetta, Ga	do	1870 and 1872	16.02
	do	do	1872 and 1873	32.26
8530	W. O. Shields, Appling, Ga	do	1870 and 1872	35.54
	do	do	1872	10.32
8531	A. S. Hardin, Appling, Ga	do	1873 and 1874	30.94
8532	Louisa Castleberry, Auraria, Ga	do	1870	3.42
	do	do	1870 and 1872	6.78
8533	J. S. Wilson, Bairdstown, Ga	do	do	52.52
	do	do	1872 and 1874	62.50
8534	H. D. Leitner, Berzelia, Ga	do	1868 and 1870	50.56
	do	do	1870 and 1872	52.42
8535	J. O. Spann, Bethany, Ga	do	1872 and 1872	17.21
	do	do	1872 and 1874	101.92
8536	Joseph M. Chambers, Big Savanna, Ga	do	1870 and 1872	9.90
8537	W. T. McMichael, Blackshear, Ga	do	1868 and 1869	21.50
8538	Benjamin M. Fryer, Blakeley, Ga	do	1870 and 1872	75.36
	do	do	1872 and 1874	61.48
8539	J. N. Shelnutt, Bowdon, Ga	do	1871 and 1872	134.06
8540	B. Bowers, Bowersville, Ga	do	do	10.42
8541	Franklin Dean, Buchanan, Ga	do	do	11.00
8542	Charles Mulkey, Butler, Ga	do	1868 and 1870	49.12
8543	George W. Ransom, Calhoun, Ga	do	1872 and 1874	139.62
8544	Harrison Fairbanks, Calvary, Ga	do	do	9.82
8545	John B. Worddall, Campbellton, Ga	do	1870 and 1872	30.84
8546	R. T. Daniel, Canton, Ga	do	1870 and 1872	61.32
	do	do	1872 and 1874	35.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8547	Ella E. Pitchford, Cataula, Ga	Compensation of postmasters readjusted, etc.	1868 and 1870	$60.90
	do	do	1870 and 1872	31.68
	do	do	1872 and 1874	32.03
8548	Henry May, Cedartown, Ga	do	1868 and 1870	97.02
	do	do	1870 and 1872	31.99
8549	W. C. Knight, Cedartown, Ga	do	1872	.85
8550	Robert A. Cheney, Chalybeate Springs, Ga.	do	1870 and 1872	46.74
	do	do	1872	5.80
8551	Celia A. R. Daniels, Colquit, Ga	do	1868 and 1870	19.90
8552	J. D. McLinden, Concord, Ga	do	1872 and 1874	18.06
8553	W. R. McCalla, Conyers, Ga	do	1868 and 1869	36.23
8554	Aaron W. Woody, Dahlonega, Ga	do	1870 and 1871	31.32
8555	Miss M. C. Hesler, Dublin, Ga	do	1871 and 1872	79.51
8556	Amos L. Vail, Elberton, Ga	do	1870 and 1871	25.03
8557	Thomas M. Swift, Elberton, Ga	do	1871 and 1872	41.19
8558	William H. Scoville, Ellaville, Ga	do	1868 and 1870	37.38
8559	J. M. Watkins, Ellijay, Ga	do	1869	2.22
8560	John M. Greer, Ellijay, Ga	do	1870	4.44
	do	do	1872	5.00
8561	R. C. McCullough, Floyd Springs, Ga	do	1868	2.14
8562	S. P. Bond, Franklin Springs, Ga	do	1872 and 1874	20.60
8563	John R. M. Neel, Georgetown, Ga	do	1871 and 1872	48.18
8564	J. R. Jones, Herndon, Ga	do	1873 and 1874	118.37
8565	J. G. Goss, Houston, Ga	do	1870 and 1872	44.52
	do	do	1872 and 1874	42.36
8566	Pleasant Short, Ivy Log, Ga	do	1873 and 1874	7.86
8567	Jonathan D. Wynn, Jacksonville, Ga	do	1871 and 1872	17.35
8568	James H. Rogers, La Fayette, Ga	do	1870 and 1872	47.46
	do	do	1872 and 1874	42.64
8569	Lucy Claiborne, Lawrenceville, Ga	do	1870 and 1872	39.41
8570	John P. Brown, Liberty Hill, Ga	do	1870	8.23
8571	Herbert D. Ingersoll, Loudsville, Ga	do	1870 and 1872	17.14
	do	do	1872	.68
8572	R. J. Pannal, Louisville, Ga	do	1868 and 1870	62.50
	do	do	1870 and 1872	157.08
	do	do	1872 and 1874	140.90
8573	Mrs. Fanny Teagle, Luthersville, Ga	do	1870 and 1872	11.08
	do	do	1872 and 1874	24.84
8574	James T. Whaley, Mayfield, Ga	do	1868 and 1870	41.84
	do	do	1870 and 1872	53.98
8575	W. L. Zachry, Monticello, Ga	do	1871 and 1872	28.15
8576	R. A. Morgan, Morgansville, Ga	do	1868 and 1870	4.46
	do	do	1872 and 1874	25.46
8577	Josiah R. Dean, Nacoochee, Ga	do	1871	23.58
8578	George Russell, Newton Factory, Ga	do	1873 and 1874	2.59
8579	Sallie V. Holsenbake, Oglethorpe, Ga	do	1872 and 1873	46.71
8580	John A. Donald, Ophir, Ga	do	1872 and 1874	13.44
8581	A. D. Bridgman, Panamore, Ga	do	1871 and 1872	44.43
	do	do	1872 and 1874	22.16
8582	Caleb Conley, Pond Spring, Ga	do	1870 and 1872	6.14
	do	do	1872 and 1874	4.47
8583	Mrs. N. A. R. Davenport, Preston, Ga	do	1870 and 1871	34.08
8584	R. W. Weatherly, Red Clay, Ga	do	1870 and 1872	58.84
	do	do	1872	5.44
8585	Robert F. Lester, Reidsville, Ga	do	1871 and 1872	13.41
8586	John Hill, Resaca, Ga	do	1868 and 1870	18.11
	do	do	1870 and 1872	38.00
8587	Henry Hodges, Reynolds, Ga	do	1870 and 1872	48.86
8588	John G. Hale, Rising Fawn, Ga	do	1870 and 1872	74.06
8589	T. D. Adams, Roswell, Ga	do	1868 and 1870	39.26
	do	do	1872 and 1874	113.06
8590	William M. Murphy, Snapping Shoals, Ga.	do	1872 and 1874	23.30
8591	J. F. Sproull, Stilesborough, Ga	do	1868 and 1870	62.74
	do	do	1870 and 1872	66.24
	do	do	1872 and 1874	22.50
8592	D. J. Hammond, Summerville, Ga	do	1870 and 1872	85.80
8593	Mary E. Brown, Suwanee, Ga	do	1870 and 1872	11.76
	do	do	1872 and 1874	18.36
8594	Joseph Jackson, Talbotton, Ga	do	1868 and 1870	144.30
8595	R. W. Neal, Thomson, Ga	do	1872 and 1874	71.92
8596	C. M. Lindsay, Toomsborough, Ga	do	1870 and 1872	55.22
8597	T. R. Smith, Valdosta, Ga	do	1872 and 1874	156.30
8598	W. B. Candler, Villa Rica, Ga	do	1870 and 1872	19.00
	do	do	1872 and 1874	36.68
8599	Samuel Brodnax, Walnut Grove, Ga	do	1870 and 1872	28.88

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8599	Samuel Brodnax, Walnut Grove, Ga	Compensation of postmasters readjusted, etc.	1872 and 1874	$28.22
8600	J. T. Mulkey, Walton's Ford, Ga	do	do	10.14
8601	M. T. Handley, Warm Springs, Ga	do	do	15.28
8602	George W. Morgan, Washington, Ga	do	do	157.46
8603	Benjamin Hirsch, Waynesville, Ga	do	do	15.56
8604	John S. Stevens, White Plains, Ga	do	1870 and 1872	19.24
	do	do	1872 and 1874	68.26
8605	Mary G. McKee, White Sulphur Springs, Ga.	do	1870 and 1872	124.82
	do	do	1872 and 1874	88.76
8606	A. M. Mulholland, Whitesville, Ga	do	1870 and 1872	43.41
8607	James A. Pinney, Idaho City, Idaho	do	1870 and 1872	653.16
	do	do	1872 and 1873	292.20
8608	J. H. Ralston, Placerville, Idaho	do	1866 and 1868	260.96
	do	do	1868 and 1870	48.74
	do	do	1870 and 1872	63.12
	do	do	1874	40.28
	Total compensation of postmasters readjusted under act of March 3, 1883. (Originally reported in House Ex. Doc. No. 49, Forty-ninth Congress, second session.)			44,242.62
8647	W. D. Lomax, Abingdon, Ill	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiency in postal revenues, 1885 and prior years.	1866 and 1868	259.98
8648	D. Johnson, Akin, Ill	do	1866 and 1867	12.57
8649	George Ferriman, Albion, Ill	do	1866 and 1868	320.00
8650	William H. Gray, Alexander, Ill	do	do	15.26
8651	William Henry, Algonquin, Ill	do	1866 and 1867	97.09
	do	do	1870 and 1872	73.43
8652	James Philip, Algonquin, Ill	do	1867 and 1868	58.24
8653	J. P. Anderson, Allen's Springs, Ill	do	1872 and 1874	3.88
8654	John R. Slone, Alma, Ill	do	1866 and 1868	30.96
8655	E. A. Converse, Andover, Ill	do	1870	21.11
8656	Olof Olson, Andover, Ill	do	1870 and 1872	122.28
	do	do	1872 and 1874	237.02
8657	Nathan Dresser, Anna, Ill	do	1866 and 1868	184.28
8658	M. P. Rackerly, Annapolis, Ill	do	1871 and 1872	3.36
8659	Isaac F. Pearson, Annawan, Ill	do	1866	24.55
8660	William D. Knapp, Appanoose, Ill	do	1866 and 1868	20.56
8661	A. Downtain, Arcadia, Ill	do	1871 and 1872	34.84
	do	do	1872 and 1874	10.12
8662	J. J. Henry, Arcola, Ill	do	1866 and 1867	129.95
8663	William Ellis, Argenta, Ill	do	1874	2.23
8664	William H. Balcom, Argo, Ill	do	1866 and 1868	33.04
	do	do	1868 and 1870	8.28
	do	do	1870 and 1872	9.74
	do	do	1872 and 1874	11.96
8665	J. M. Billingslea, Arlington, Ill	do	1866 and 1867	39.93
8666	Marion D. Paxton, Arlington, Ill	do	1870 and 1872	132.28
	do	do	1872 and 1874	158.04
8667	James W. Price, Armstrong, Ill	do	1868	1.39
	do	do	1868 and 1870	8.06
	do	do	1870 and 1872	11.16
	do	do	1872 and 1874	17.10
8668	George W. Bryson, Armington, Ill	do	1866 and 1868	81.10
	do	do	1870 and 1872	17.40
	do	do	1872 and 1874	20.40
8669	Joel R. Smith, Ash Grove, Ill	do	1866	6.81
8670	Wealey Harvey, Ash Grove, Ill	do	1867 and 1868	20.43
8671	William A. Turner, Ash Grove, Ill	do	1874	6.24
8672	William R. Hunter, Ashland, Ill	do	1866 and 1868	65.16
	do	do	1870 and 1872	50.30
8673	William Hawkins, Ashland, Ill	do	1866	29.58
8674	Elias Monroe, Ashmore, Ill	do	1870 and 1872	53.70
8675	H. P. Stoneberger, Astoria, Ill	do	1871 and 1872	20.52
8676	T. S. Patterson, Athensville, Ill	do	1872 and 1874	29.28
8677	Theo. Parrott, Augusta, Ill	do	1866 and 1868	212.96
	do	do	1868 and 1870	488.60
8678	Joseph Pease, Augusta, Ill	do	1870	110.22
8679	David Marshall, Austin, Ill	do	1870 and 1872	31.41

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8679	N. L. Gilbert, Austin, Ill	Compensation of postmasters readjusted, etc.	1872	$4.49
8680	George W. Johnson, Ava, Ill	do	1866 and 1867	14.57
8681	J. B. Johnson, Ava, Ill	do	1867 and 1868	14.54
8682	Joseph B. Hull, Babcock's Grove, Ill	do	1866 and 1868	64.74
	do	do	1870 and 1872	21.12
8683	A. J. Gullick, Baden Baden, Ill	do	1866	11.48
8684	Philip Schaefer, Baden Baden, Ill	do	1871 and 1872	10.46
	do	do	1872 and 1874	34.78
8685	Mayo H. Philbrick, Baileyville, Ill	do	1866 and 1868	68.26
	do	do	1870 and 1872	37.46
8686	Virgil Collins, Baldwinsville, Ill	do	1866 and 1867	25.50
8687	George L. Owen, Bainbridge, Ill	do	1866 and 1868	19.46
8688	Thomas Q. Cain, Banston, Ill	do	do	16.26
8689	William Howarth, Barrington, Ill	do	do	68.68
8690	J. B. Steidley, Barr's Store, Ill	do	do	35.72
	do	do	1870 and 1871	5.15
8691	James R. Morrison, Bates, Ill	do	1866 and 1868	22.18
	do	do	1872 and 1874	38.52
8692	Simon P. Hadley, Beck's Creek, Ill	do	1866 and 1868	15.08
	do	do	1870 and 1872	6.54
	do	do	1872 and 1874	5.60
8693	Louis Mettahausen, Beecher, Ill	do	do	20.46
8694	L. J. Frank, Bedford, Ill	do	1870 and 1872	15.32
	do	do	1872 and 1874	22.06
	do	do	1866 and 1868	60.06
8695	George W. Skidmore, Belleview, Ill	do	1866	6.15
8696	M. M. Long, Belleview, Ill	do	1866 and 1868	43.03
	do	do	1870 and 1872	28.88
8697	Charles S. Todd, Belle Prairie, Ill	do	1867 and 1868	7.81
	do	do	1870 and 1872	20.30
	do	do	1872 and 1874	32.30
8698	John A. Cotton, Belvidere, Ill	do	1868 and 1870	605.40
8699	H. McClaughey, Bernadotte, Ill	do	1867 and 1868	30.37
8700	Kneeling Berry, Berryton, Ill	do	1866 and 1868	35.34
8701	Rudolph A. Beck, Berwick, Ill	do	1866 and 1867	17.00
	do	do	1869 and 1870	27.51
	do	do	1872 and 1874	24.30
8702	A. J. Thompson, Bethel, Ill	do	1866 and 1868	52.64
	do	do	1870 and 1872	17.26
8703	C. M. Gibson, Bible Grove, Ill	do	1866 and 1868	30.50
	do	do	1868 and 1870	13.72
8704	Joshua Rhodes, Big Rock, Ill	do	1866 and 1868	21.76
8705	Swan Swanson, Bishop Hill, Ill	do	do	47.10
8706	Lewis M. Colvin, Bishop Station, Ill	do	1872 and 1873	11.58
8707	Robert Kerr, Bismarck, Ill	do	1873 and 1874	19.44
8708	William A. Campbell, Blair, Ill	do	1872 and 1874	13.24
8709	F. S. Merrill, Blackberry, Ill	do	1866 and 1867	9.40
	do	do	1870 and 1872	6.12
8710	Robert Tweed, Bliven's Mills, Ill	do	1866 and 1868	18.30
	do	do	1868 and 1870	13.90
	do	do	1872 and 1874	21.88
8711	Myron Eddy, Blood's Point, Ill	do	1866	3.78
8712	Louis Oswald, Bloom, Ill	do	1866 and 1868	61.28
	do	do	1868 and 1870	41.48
	do	do	1872 and 1874	48.20
8713	John H. Rochler, Bloomingdale, Ill	do	1868 and 1869	74.65
8714	Henry B. Robinson, Blue Island, Ill	do	1866 and 1868	79.44
8715	Spencer G. Russell, Bluff Dale, Ill	do	do	21.10
	do	do	1868 and 1870	6.26
	do	do	1872 and 1874	18.60
8716	Thomas R. Bircket, Bone Gap, Ill	do	1870 and 1872	13.58
8717	John Philips, Bonwell, Ill	do	1866 and 1868	32.94
	do	do	1870 and 1871	4.69
8718	Mrs. E. A. Church, Bonus, Ill	do	1872 and 1874	7.94
8719	R. C. Lough, Boot, Ill	do	1866 and 1868	25.04
	do	do	1868 and 1870	2.58
	do	do	1870 and 1872	4.48
8720	G. Letourneux, Bourbonnais, Grove, Ill	do	1866 and 1867	110.86
8721	* Hiram W. Taylor, Bowling Green, Ill	do	1866 and 1868	17.36
8722	James B. Russell, Bradford, Ill	do	1866 and 1867	29.52
8723	Wm. Mohlenbrock, Bradley, Ill	do	1868 and 1870	14.68
	do	do	1870 and 1872	20.04
	do	do	1872 and 1874	19.94
8724	L. J. Patterson, Breese, Ill	do	1866 and 1868	52.98
8725	Solomon S. Pope, Bristol, Ill	do	1870 and 1872	55.44
8726	W. H. Manlove, Brooklyn, Ill	do	1866 and 1868	61.64
	do	do	1868	1.19

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8727	Samuel F. Wallace, Browning, Ill	Compensation of postmasters readjusted, etc.	1870 and 1872	$28.22
8728	John Burget, Brushy Fork, Ill	do	1866 and 1868	44.10
8729	Andrew Flock, Buckhart, Ill	do	do	79.92
8730	Alexander Hendrick, Buck Horn, Ill	do	do	37.42
8731	George L. Emerson, Buda, Ill	do	1866	15.34
8732	Isaac D. Page, Buda, Ill	do	1866 and 1868	107.40
	do	do	1872 and 1874	144.90
8733	Samuel Sloan, Buffalo Prairie, Ill	do	1866	7.95
8734	Lewis Johnson, Buford, Ill	do	1866 and 1868	26.40
8735	F. T. Hedley, Bunker Hill, Ill	do	1872 and 1874	157.08
8736	Martin C. Peterson, Bureau Junction, Ill.	do	1870 and 1872	38.34
8737	Paul C. Brag, Burkesville, Ill	do	1868 and 1870	14.88
	do	do	1870 and 1872	38.24
8738	Mary Brown, Burns, Ill	do	1866	3.41
8739	David Cosner, Burns, Ill	do	1867 and 1868	10.24
	do	do	1872 and 1874	10.88
8740	* Hiram W. Taylor, Bowling Green, Ill	do	1868 and 1870	.78
	do	do	1870 and 1872	2.70
	do	do	1872 and 1874	4.62
8741	Chester L. Ames, Cabery, Ill	do	do	5.18
8742	Thomas B. Echols, Caledonia, Ill	do	1866 and 1867	22.98
8743	Henry M. Smith, Caledonia, Ill	do	1873 and 1874	38.99
8744	H. S. Grinnell, Caledonia Station, Ill	do	1872 and 1874	114.99
8745	S. S. Stokes, Calhoun, Ill	do	1870 and 1872	95.20
8746	George Houk, Camargo, Ill	do	1867 and 1868	52.36
	do	do	1868 and 1870	51.02
	do	do	1870 and 1872	41.58
8747	Willis Watts, Camden, Ill	do	1867 and 1868	69.18
8748	Thomas Weightman, Camden, Ill	do	1866	22.06
8749	Ralph H. Osborne, Campbell, Ill	do	do	63.55
8750	N. S. Freeman, Campbell, Ill	do	1870 and 1872	24.26
	do	do	1872 and 1874	29.56
8751	W. A. Lindsay, Campton, Ill	do	1868 and 1870	34.22
8752	Christian Bidamon, Canton, Ill	do	do	768.18
8753	Robert W. Hamilton, Carbondale, Ill	do	1867 and 1868	134.10
8754	Yearly Land, Carmi, Ill	do	1866	54.44
8755	Martin Vaught, Carmi, Ill	do	1866 and 1867	106.80
8756	Wash Sanford, Casey, Ill	do	1868 and 1870	43.56
8757	John J. Godwin, jr., Cave in Rock, Ill	do	1871 and 1872	7.82
	do	do	1872 and 1874	23.42
8758	James Chapman, Cayuga, Ill	do	1872	3.59
8759	J. Richart, Cedarville, Ill	do	1866 and 1868	56.64
	do	do	1870 and 1872	52.74
	do	do	1872 and 1874	56.28
8760	D. D. Belden, Centre Point, Ill	do	1866	1.09
8761	Julius DeLong, Centre Point, Ill	do	1868	.63
	do	do	1868 and 1870	5.84
	do	do	1870	.73
8762	Marshall P. DeLong, Centre Point, Ill	do	1870 and 1872	3.35
	do	do	1872 and 1874	56.50
8763	S. F. Fleharty, Centre Ridge, Ill	do	1866	7.40
8764	Almond Shaw, Centre Ridge, Ill	do	1866 and 1867	16.96
8765	Andrew Touchette, Centreville Station, Ill.	do	1874	2.28
8766	John W. Scroggs, Champaign, Ill	do	1866	53.97
8767	E. M. McAllister, Champaign, Ill	do	1867 and 1868	185.96
8768	Chauncey Bradford, Channahon, Ill	do	1866 and 1868	88.02
8769	W. B. Cleveland, Chelsea, Ill	do	do	59.20
8770	John B. Lenney, Chenoa, Ill	do	1866	104.97
8771	Sarah B. Johnson, Cherry Valley, Ill	do	1866 and 1868	167.32
8772	William A. Edgarton, Chesterfield, Ill	do	do	82.12
8773	John S. Clark, Chestnut, Ill	do	1874	6.77
8774	George N. Crowley, Chili, Ill	do	1866	5.73
	do	do	1870 and 1872	23.78
	do	do	1872 and 1874	25.16
8775	Joseph C. Caine, Chili, Ill	do	1866 and 1868	88.01
8776	Andrew Scholes, Chillicothe, Ill	do	1868 and 1869	77.40
8777	W. H. H. Larimore, Circleville, Ill	do	1866 and 1868	4.04
8778	Jacob Beuird, Claremont, Ill	do	do	89.10
8779	J. G. McSchooler, Clay City, Ill	do	1866	44.74
8780	R. E. Duff, Clay City, Ill	do	1867 and 1868	195.99
8781	Henry C. Bothwell, Clay City, Ill	do	1870 and 1872	63.90
	do	do	1872 and 1874	120.34
8782	Andrew J. Bunch, Clear Creek Landing, Ill.	do	1870 and 1872	51.72
8783	Samuel Johnson, Clement, Ill	do	1873 and 1874	90.28

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8784	Thomas Martin, Coal Valley, Ill	Compensation of postmasters readjusted, etc.	1868 and 1870	$89.06
	do	do	1870 and 1872	124.38
	do	do	1872 and 1874	92.82
8785	Augustin Lillard, Colchester, Ill	do	1867 and 1868	73.85
8786	John Patrick, Colchester, Ill	do	1866	24.61
8787	J. M. Frizzell, Cold Spring, Ill	do	1866 and 1868	58.66
	do	do	1870 and 1872	40.96
	do	do	1872 and 1874	23.04
8788	J. H. Kuhlenbeck, Collinsville, Ill	do	1866	15.72
8789	Chris. Breidecker, Columbia, Ill	do	1866 and 1868	90.86
	do	do	1870 and 1872	69.18
8790	Charles E. Patridge, Como, Ill	do	1866 and 1868	103.30
	do	do	1868 and 1870	23.96
8791	Joseph Banks, Compton, Ill	do	1873 and 1874	17.45
8792	H. E. Henry, Cooperstown, Ill	do	1866 and 1868	56.82
	do	do	1868 and 1870	11.78
	do	do	1870 and 1872	19.52
	do	do	1872 and 1874	19.06
8793	Joseph R. Austin, Copperas Creek, Ill	do	1866 and 1867	17.05
8794	Mary A. Cleaver, Coral, Ill	do	1870 and 1872	12.29
	do	do	1872 and 1874	42.32
8795	Thomas R. Stewart, Corinth, Ill	do	1868 and 1870	6.04
8796	Thomson Boyd, Cottonwood, Ill	no	1866 and 1868	41.28
	do	do	1872 and 1874	2.84
8797	Henry O. Snyder, Conlogue, Ill	do	1866 and 1868	13.50
8798	William A. McHaney, Crab Orchard, Ill	do	1866	16.80
8799	Gustavus Brauns, Crete, Ill	do	1866 and 1868	162.78
	do	do	1870 and 1872	119.78
	do	do	1872 and 1874	151.64
8800	H. H. House, Crittenden, Ill	do	1866	6.75
8801	Henry L. Baker, Darien, Ill	do	1870 and 1872	49.10
8802	George Martin Eckert, Darmstadt, Ill	do	do	21.12
8803	Clark S. Hall, Darwin, Ill	do	1866 and 1867	47.33
8804	John Marvin, Darwin, Ill	do	1867 and 1868	53.43
8805	William W. Judd, Dawson, Ill	do	1870 and 1872	26.70
	do	do	1872 and 1874	43.24
8806	O. H. Trumbo, Dayton, Ill	do	1866 and 1867	5.75
8807	Edwin D. Dean, Dean's Corners, Ill	do	1866 and 1868	13.10
	do	do	1870 and 1872	43.28
8808	Christian Antes, Deerfield, Ill	do	1869 and 1870	5.60
8809	Elijah Wiltse, Deerfield Prairie, Ill	do	1866 and 1868	12.36
	do	do	1868	2.99
8810	M. V. Hamilton, Delhi, Ill	do	1866 and 1868	48.60
	do	do	1868 and 1869	17.34
8811	S. B. Clapp, Delhi, Ill	do	1869 and 1870	28.90
8812	Joseph S. Lindsey, Del Rey, Ill	do	1866 and 1868	20.68
	do	do	1868 and 1870	13.68
	do	do	1872 and 1874	22.20
8813	James N. Savage, Delta, Ill	do	1868 and 1869	14.99
8814	C. D. Bellville, Delta, Ill	do	1870	2.66
8815	A. J. Rockwell, Denny, Ill	do	1866 and 1868	10.12
	do	do	1868 and 1869	5.68
	do	do	1872 and 1874	10.10
8816	Joseph Dorsey, Denver, Ill	do	1870 and 1872	64.12
	do	do	1872 and 1874	29.62
8817	J. W. Bandy, De Soto, Ill	do	1866 and 1868	135.38
	do	do	1868 and 1870	87.00
8818	J. G. Sevir, Detroit, Ill	do	1866	7.75
8819	M. R. Peckenpaugh, Detroit, Ill	do	1867	7.75
8820	Thomas B. Ownby, Detroit, Ill	do	1867 and 1868	15.50
8821	J. S. McConkey, De Witt, Ill	do	1866 and 1868	114.66
8822	Myron Moore, Diamond Lakes, Ill	do	1866 and 1867	11.73
8823	Curtis G. Wenban, Diamond Lakes, Ill	do	1867 and 1868	19.55
8824	Sherrod Williams, Dillon, Ill	do	1866 and 1868	10.26
	do	do	1870 and 1872	21.34
	do	do	1872 and 1874	51.44
8825	Conrad Zimmer, Dolton's Station, Ill	do	do	20.02
8826	E. Leavenworth, Dongola, Ill	do	1866	28.99
8827	W. W. Palmer, Dongola, Ill	do	1867 and 1868	86.97
	do	do	1868 and 1870	93.60
8828	M. Hampton, Donnellson, Ill	do	1866 and 1868	17.98
	do	do	1870 and 1872	32.86
	do	do	1872 and 1874	18.18
8829	W. T. Keas, Dorchester, Ill	do	1868 and 1870	23.26
	do	do	1872 and 1874	41.96
8830	William Robertson, Dorset, Ill	do	1866 and 1868	11.20
	do	do	1868 and 1870	8.28

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8831	Caleb Pierce, Dover, Ill	Compensation of postmasters readjusted, etc.	1866 and 1868	$66.84
8832	Eli Drury, Drury, Ill	do	1868 and 1870	4.18
	do	do	1870 and 1872	5.18
8833	M. McIntire, Duck Creek, Ill	do	1866 and 1868	17.88
8834	J. S. Hewett, Dudley, Ill	do	1868	11.28
	do	do	1868 and 1870	29.00
8835	W. D. Rockwell, Dudleyville, Ill	do	1869 and 1870	12.30
	do	do	1870 and 1872	19.74
8836	Joseph P. Paul, Duncan, Ill	do	do	44.94
	do	do	1872 and 1874	98.06
8837	David Zimmerman, Duncannon, Ill	do	1870 and 1872	9.06
	do	do	1872	.56
8838	Hiram C. Wentworth, Duncan's Mills, Ill.	do	1866 and 1867	35.83
8839	Walter Belless, Duncan's Mills, Ill	do	1867 and 1868	35.83
	do	do	1868 and 1870	6.98
	do	do	1870 and 1872	35.78
8840	Seymour Brightman, Dunn, Ill	do	1866 and 1867	20.12
8841	James B. Yearian, Duquoin, Ill	do	1866 and 1868	414.28
8842	Otto Huelbiz, Dutch Hill, Ill	do	1867 and 1868	4.66
8843	C. H. Sutphen, Earlville, Ill	do	1866	11.05
8844	L. B. Smith, East Burlington, Ill	do	1872 and 1874	3.20
8845	Albert Randall, East Cambridge, Ill	do	1866 and 1867	16.52
8846	John Q. Russell, East Northfield, Ill	do	do	10.00
	do	do	1868 and 1870	10.86
	do	do	1870 and 1871	36.61
8847	Amasa S. Thomas, East Wheatland, Ill	do	1868	5.41
8848	Horace Graves, Eaton, Ill	do	1868 and 1869	5.14
8849	Gideon Minor, Edgar, Ill	do	1873 and 1874	77.92
8850	J. N. Faulk, Edgewood, Ill	do	1866 and 1868	89.58
	do	do	1868 and 1869	25.00
8851	E. Barbee, Edgewood, Ill	do	1869 and 1870	46.84
8852	Erhard Kramm, Edward's Station, Ill	do	1870 and 1872	10.26
8853	H. H. Hitch, Elbridge, Ill	do	1866 and 1868	71.86
	do	do	1870 and 1872	24.00
8854	William Jones, El Dara, Ill	do	1866 and 1868	75.64
	do	do	1872 and 1874	22.62
8855	G. N. Slahn, Eldena, Ill	do	1870 and 1872	12.50
	do	do	1872 and 1874	24.30
8856	Samuel G. Latham, El Dorado, Ill	do	1866	24.17
8857	John W. Cox, El Dorado, Ill	do	1870 and 1872	25.04
8858	Edwin R. Prindle, Eleroy, Ill	do	1873 and 1874	32.12
8859	David F. Noble, Eliza, Ill	do	1866 and 1868	3.38
	do	do	1868 and 1870	.32
	do	do	1870 and 1872	.40
8860	C. M. Ferrell, Elizabethtown, Ill	do	1866 and 1868	75.48
	do	do	1868 and 1870	53.86
8861	M. L. Curtis, Elk Grove, Ill	do	1868	.64
	do	do	1870 and 1872	22.84
8862	Daniel Perrine, Elkton, Ill	do	1868	4.58
	do	do	1868 and 1870	12.02
	do	do	1870 and 1871	1.47
8863	A. W. Skinner, Elkville, Ill	do	1873 and 1874	7.72
8864	L. J. Field, Elliottstown, Ill	do	1866 and 1868	40.04
8865	F. C. Peters, Ellis Grove, Ill	do	1866 and 1868	10.26
8866	John Schoeppel, Ellis Grove, Ill	do	1872 and 1874	10.10
8867	John Spence, Elm Grove, Ill	do	1866 and 1868	23.94
8868	T. T. Hulen, Elm Grove, Ill	do	1872	17.08
8869	Gerry Bates, Elmhurst, Ill	do	1866	48.04
8870	David Bowers, Elmwood, Ill	do	1866	208.51
8871	James P. Leslie, Elmwood, Ill	do	1866 and 1867	54.87
8872	Joseph Brock, Elsah, Ill	do	1868 and 1870	29.42
	do	do	1870 and 1872	19.44
8873	James A. Stevens, Elwin, Ill	do	1866 and 1867	39.61
8874	William T. Kelley, Elwood, Ill	do	1866 and 1868	59.26
	do	do	1868 and 1869	27.84
8875	Charles Horn, Endor, Ill	do	1866 and 1868	13.64
8876	Mrs. Elvina S. Clark, Englewood, Ill	do	1866 and 1868	46.74
8877	do	do	1870 and 1872	125.76
8878	Charles Mead, English Prairie, Ill	do	1866 and 1868	7.60
	do	do	1872 and 1874	4.46
8879	W. H. Crawford, Equality, Ill	do	1866	19.10
8880	R. S. Burchill, Erie, Ill	do	1870 and 1872	97.70
	do	do	1872 and 1874	69.22
8881	John Wilson, Eugene, Ill	do	1866	5.98
8882	D. B. Jones, Eugene, Ill	do	1867 and 1868	17.94
	do	do	1870 and 1872	22.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Apropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8882	D. B. Jones, Eugene, Ill	Compensation of postmasters readjusted, etc.	1872 and 1873	$18.29
8883	J. R. Gray, Excelsior Mills, Ill	do	1870 and 1872	20.58
	do	do	1872 and 1874	17.96
8884	John Alderson, Exeter, Ill	do	1866	10.16
8885	C. P. Curry, Exeter, Ill	do	1866 and 1867	26.48
8886	Luke Bonistcel, Exeter, Ill	do	1868	11.82
	do	do	1868 and 1870	57.62
8887	Stephen Laws, Exeter, Ill	do	1872 and 1874	58.06
8888	Charles Sibley, Fairfield, Ill	do	1866	23.94
8889	Francis Bell, Fair Haven, Ill	do	1866 and 1868	14.60
	do	do	1870 and 1872	43.18
	do	do	1872 and 1374	17.96
8890	James N. Suydam, Fairview, Ill	do	do	98.96
8891	John G. Wyckoff, Fairview, Ill	do	1866 and 1868	69.97
8892	John Weber, Fairweather, Ill	do	1867 and 1868	71.86
8893	Christian Littler, Fairweather, Ill	do	1870 and 1872	21.48
	do	do	1872 and 1874	22.46
8894	William Caldwell, Farmington, Ill	do	1866 and 1868	289.38
8895	Adolph Habeck, Farmville, Ill	do	do	38.01
	do	do	1868 and 1870	5.86
	do	do	1870	1.08
8896	W. G. Vanmatre, Fayette, Ill	do	1866 and 1867	24.23
8897	Mary Gavitt, Ferdinand, Ill	do	1866 and 1868	18.30
	do	do	1868 and 1870	7.68
8898	Thomas A. H. Bigelow, Fiatt, Ill	do	do	8.88
	do	do	1872 and 1874	5.14
8899	William L. West, Fieldon, Ill	do	1870 and 1871	53.81
8900	James M. Young, Fieldon, Ill	do	1870	10.76
8901	Jonathan B. Lane, Fillmore, Ill	do	1870 and 1872	7.78
8902	William Boggs, Fish Hook, Ill	do	1866 and 1867	12.06
8903	George Maxwell, Flat Rock, Ill	do	1866 and 1868	16.94
	do	do	1868 and 1870	22.82
	do	do	1871 and 1872	4.94
8904	David Hamilton, Flint, Ill	do	1866 and 1868	19.74
	do	do	1868 and 1870	10.08
	do	do	1872 and 1873	2.76
8905	C. H. Murphy, Flora, Ill	do	1866 and 1868	129.84
	do	do	1868 and 1869	61.20
8906	Alexander Cross, Forest City, Ill	do	1868 and 1870	34.06
	do	do	1870 and 1872	142.00
	do	do	1872 and 1874	95.16
8907	Henry Rogers, Forksville, Ill	do	1866	26.14
8908	Clark Gale, Forskville, Ill	do	1867 and 1868	78.42
8909	Jacob H. Emrick, Fountain Green, Ill	do	1866 and 1868	35.48
8910	C. F. Hubert, Fowler, Ill	do	1870 and 1872	26.16
8911	do	do	1872 and 1874	33.06
8912	M. L. Galiger, Fox Lake, Ill	do	1866 and 1868	28.64
8913	W. B. Cleveland, Frankfort Station, Ill	do		57.20
8914	H. A. Black, Franklin Grove, Ill	do		175.05
8915	Grove Cunningham, Fredericksville, Ill	do		119.52
8916	R. Wright, Freedom, Ill	do		26.90
8917	S. W. Lawry, Freedom, Ill	do		13.45
	do	do		57.54
	do	do		54.64
	do	do		36.96
8918	Alfred Bradbury, Freeland, Ill	do		41.32
	do	do		1.54
8919	W. D. Jenkins, Freemanton, Ill	do		16.90
8920	C. F. Bliss, Fremont Centre, Ill	do		56.94
	do	do		16.30
8921	Ira J. Hoyt, Fremont Centre, Ill	do		9.14
	do	do		2.34
8922	Bernardine Pelletier, French Village, Ill	do		18.06
8923	A. M. Maxwell, Friend Grove, Ill	do		7.38
8924	R. T. Wilkinson, Friendsville, Ill	do		126.28
8925	Charles Fox, Fullersburgh, Ill	do		68.96
	do	do		63.16
	do	do		22.60
8926	George W. Brown, jr., Gallatia, Ill	do		18.52
8927	A. J. Cleveland, Gallatia, Ill	do		9.26
8928	W. C. Roper, Gallatia, Ill	do		27.78
8929	John Worthington, Galloway, Ill	do		12.86
	do	do		11.48
	do	do		9.68
8930	R. J. Dryman, Gap Grove, Ill	do		39.76
	do	do		75.94
	do	do		25.34

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8931	Ephraim Brookfield, Genesee, Grove, Ill.	Compensation of postmasters readjusted, etc.	.....	$30.00
8932	Warner P. Cook, Geneseo, Ill	do	1867	119.20
8933	Robert F. Steele, Geneseo, Ill	do	1867 and 1868	255.10
8934	George A Hobbs, Geneseo, Ill	do	1866	67.88
	do	do	1870 and 1872	863.64
	do	do	1872 and 1874	572.94
8935	Horatio N. Perkins, Genoa, Ill	do	1866 and 1868	101.20
	do	do	1870 and 1872	28.78
	do	do	1872 and 1874	53.70
8936	J. Newlin, Georgetown, Ill	do	1866 and 1868	231.44
8937	John Numeyer, Germantown, Ill	do	1870 and 1872	38.40
	do	do	1872 and 1874	29.10
8938	W. J. McCulloch, Gilson, Ill	do	1870 and 1872	98.06
8939	Benjamin Leigh, Girard, Ill	do	1872 and 1874	232.62
8940	Peter Simons, Glasgow, Ill	do	1871 and 1872	27.12
8941	A. W. Fletcher, Glencoe, Ill	do	do	8.65
8942	Orson Nichols, Gording's Grove, Ill	do	1866 and 1868	48.26
	do	do	1872	1.47
8943	Emmor Brinton, Grafton, Ill	do	1866 and 1868	88.54
	do	do	1868 and 1870	50.74
	do	do	1870 and 1872	90.56
	do	do	1872 and 1874	122.18
8944	David Porter, Grand Chain, Ill	do	1866 and 1868	20.98
8945	John Cavendish, Grand View, Ill	do	1872 and 1874	57.36
8946	H. C. Bagley, Grantsburgh, Ill	do	1866 and 1867	18.78
8947	Nehemiah Sherwood, Granville, Ill	do	do	63.59
8948	William D. Ward, Grayville, Ill	do	do	159.00
8949	L. L. Hollister, Grayville, Ill	do	1869 and 1870	64.72
8950	C. H. Spring, Grayville, Ill	do	1866	61.85
	do	do	1872 and 1874	101.44
8951	Joseph Crawford, Greasey, Ill	do	1866 and 1867	10.20
8952	Alba Sanford, Greenbush, Ill	do	1866	15.94
8953	James M. Frantz, Greenbush, Ill	do	1871 and 1872	18.63
8954	John S. Stevenson, Greenland, Ill	do	1866 and 1868	44.42
8955	Perry R. Black, Greenvalle, Ill	do	1866 and 1867	22.70
8956	B. P. Melick, Green Valle y, Ill	do	1871 and 1872	44.71
8957	Henry W. Champion, Green View, Ill	do	1870 and 1872	67.68
8958	Thomas Joyce, Hagley, Ill	do	1866	1.54
8959	William H. Pitcher, Hagley, Ill	do	1866 and 1868	10.75
8960	Munson Hinman, Hallock, Ill	do	1866 and 1867	3.42
8961	Alfred Hall, Halltown, Ill	do	1866 and 1868	16.00
8962	E. C. A. Cushman, Hamilton, Ill	do	1866	25.70
8963	Josiah Candor, Hamlet, Ill	do	1866 and 1868	52.48
	do	do	1870 and 1872	20.74
	do	do	1872 and 1874	37.94
8964	Ethan J. Allen, Hampshire, Ill	do	1866 and 1868	71.26
8965	Benjamin F. Child, Hardin, Ill	do	1868 and 1870	20.66
8966	J. W. Miller, Harris Grove, Ill	do	1866 and 1867	33.85
8967	Alfred Moores, Harris Grove, Ill	do	1869	5.96
8968	Richard H. Smith, Harrison, Ill	do	1866 and 1868	75.82
	do	do	1870 and 1872	13.94
8969	Thomas James, Harrisonville, Ill	do	do	20.56
	do	do	1872 and 1874	13.74
8970	George W. Clayton, Hartford, Ill	do	1866	3.38
8971	John B. Kelly, Hazel Dell, Ill	do	1866 and 1868	121.72
	do	do	1868 and 1870	19.08
	do	do	1870 and 1872	28.80
	do	do	1872 and 1874	27.25
8972	Alexander M. Hazlett, Hazlett, Ill	do	1866 and 1868	8.33
	do	do	1868	5.82
8973	W. E. Roberts, Henderson, Ill	do	1866 and 1868	53.08
	do	do	1870 and 1872	38.80
	do	do	1872 and 1874	40.80
8974	Henry F. Schroeder, Henderson, Ill	do	1874	13.00
8975	H. B. Pettingill, Hermon, Ill	do	1866	16.03
8976	E. D. Sherwood, Hermon, Ill	do	1867 and 1868	48.08
8977	C. Ames, Hickory, Ill	do	1866 and 1868	16.94
8978	do	do	1868 and 1869	3.11
8979	Isaac Zeigler, Hickory Creek, Ill	do	1866 and 1868	59.70
8980	Charles H. Gilchrist, Hick's Mills, Ill	do	do	18.92
	do	do	1868	1.45
8981	John Rice, Hidalgo, Ill	do	1866 and 1868	14.28
8982	William Z. Manchester, Hillsborough, Ill.	do	do	190.98
8983	Henry H. Long, Hollowayville, Ill	do	do	42.40
8984	Otho W. Upp, Homer, Ill	do	1870	24.72
8985	A. Ramsey, Hopper's Mills, Ill	do	1872 and 1874	22.13

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8986	John H. Harris, Hornsby, Ill	Compensation of postmasters readjusted, etc.	1867 and 1868	$21.63
8987	Delancy M. Durkee, Howardsville, Ill	do	1870	4.48
	do	do	1870 and 1872	91.86
	do	do	1872 and 1874	67.60
8988	James H. Cox, Hudson, Ill	do	1866 and 1868	68.30
	do	do	1870 and 1872	45.24
	do	do	1872 and 1874	83.36
8989	James S. Wilhite, Hutsonville, Ill	do	1866	39.73
8990	J. J. Golden, Hutsonville, Ill	do	1873 and 1874	14.45
8991	M. F. Felix, Illinois City, Ill	do	1866 and 1868	25.38
	do	do	1870 and 1872	44.60
	do	do	1872 and 1874	45.65
8992	Samuel F. Butler, Indianola, Ill	do	1870 and 1872	46.64
8993	M. H. Wilmot, Illiopolis, Ill	do	1866 and 1867	57.55
8994	B. F. Botchlett, Industry, Ill	do	1872 and 1873	31.16
8995	A. G. Talbot, Ionia, Ill	do	1866 and 1868	32.15
	do	do	1870	14.41
8996	James Pittard, Ionia, Ill	do	1870 and 1872	43.28
	do	do	1872 and 1873	18.77
8997	Mary E. Freunfelter, Iroquois, Ill	do	1866 and 1868	56.42
8998	William B. Gillum, Ivesdale, Ill	do	1872	13.83
8999	John M. Ramsey, Jamestown, Ill	do	1866 and 1868	51.08
9000	J. F. Merchant, Jefferson, Ill	do	do	316.62
9001	F. H. Peters, Jefferson, Ill	do	1870 and 1872	120.91
9002	William Rabe, Johannisburgh, Ill	do	1872 and 1873	14.05
9003	Henry Homedew, Johnsonville, Ill	do	1870 and 1872	10.54
9004	Frederick Bristow, Jeffersonville, Ill	do	1866 and 1868	19.74
9005	E. M. Calkins, Jericho, Ill	do	do	13.76
	do	do	1868 and 1870	8.72
	do	do	1872 and 1874	5.04
9006	Nathaniel G. James, Johnstown, Ill	do	1866	2.94
9007	O. P. Stufflebeam, Jordan, Ill	do	1868 and 1870	60.92
	do	do	1870 and 1871	14.48
9008	George W. Knight, Kaneville, Ill	do	1866 and 1868	113.68
9009	J. H. Scott, Kaneville, Ill	do	1870	5.23
	do	do	1870 and 1872	93.74
	do	do	1872 and 1874	42.40
9010	Ira C. Stone, Kappa, Ill	do	1866 and 1868	49.80
	do	do	1868 and 1870	46.38
9011	Philip Leonard, Kentucky, Ill	do	1866 and 1868	5.68
	do	do	1872 and 1874	1.13
9012	Rufus Mentzer, Kewanee, Ill	do	1866	28.40
9013	Orville D. Bassett, Kewanee, Ill	do	1866 and 1867	206.85
9014	George M. Miller, Kingsbury, Ill	do	1871 and 1872	17.49
	do	do	1872 and 1874	14.51
9015	William Harrison, Kingston Mines, Ill	do	1870 and 1871	18.96
9016	James Handsacker, Kingston Mines, Ill	do	1866 and 1867	29.98
9017	James A. Swearinger, Kingston Mines, Ill.	do	1867	19.96
9018	D. Andrew, Kintyre, Ill	do	1866 and 1868	39.26
9019	M. A. Green, Kyte River, Ill	do	do	6.98
9020	A. W. Burch, La Clair, Ill	do	1870	6.23
9021	Julia Springer, La Clede, Ill	do	1866	24.68
	do	do	1872	60.03
9022	Hiram Burchfield, Lacy, Ill	do	1866	6.92
	do	do	1868	5.02
	do	do	1870	8.60
9023	Lemuel M. Potter, Lafox, Ill	do	1866	30.82
9024	do	do	1868 and 1870	28.44
9025	Ephraim Z. Hills, La Harpe, Ill	do	1871 and 1872	51.65
9026	Charles Higginson, Lancaster, Ill	do	1866 and 1868	38.38
9027	Elijah Stout, Lancaster, Ill	do	1872	5.47
9028	Henry Lansing, Lansing, Ill	do	1868 and 1870	18.06
	do	do	1872 and 1874	29.28
9029	William Randall, Laonia, Ill	do	1868 and 1870	58.80
	do	do	1872 and 1874	33.58
9030	M. H. Presley, Larkinsburg, Ill	do	1866 and 1868	21.50
	do	do	1868	5.51
9031	William J. Moore, Larkinsburg, Ill	do	1868 and 1870	38.59
	do	do	1870 and 1872	18.70
9032	Creighton Ruggles, Lawrence, Ill	do	1866 and 1868	71.54
	do	do	1870 and 1871	10.71
9033	John M. Williams, Lawndale, Ill	do	1871 and 1872	22.40
9034	Mary Jane Dodd, Lena, Ill	do	1866 and 1868	381.36
9035	William Kraft, Lenzburgh, Ill	do	1866 and 1867	2.77
9036	William Fay, Leon, Ill	do	1872	1.09
9037	A. F. Lamot, L'Erable, Ill	do	1868 and 1870	15.64

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payible.	Fiscal year in which expenditure was incurred.	Amount.
9037	A. F. Lamot, L'Erable, Ill	Compensation of postmasters readjusted, etc.	1870 and 1872	$36.78
	do	do	1872 and 1874	25.42
9038	Augustus Rice, Lewiston, Ill	do	1866 and 1867	134.93
9039	A. H. D. Butts, jr., Liberty, Ill	do	1866	26.14
9040	S. W. Malone, Liberty, Ill	do	1866 and 1868	99.62
9041	E. W. Parkhurst, Libertyville, Ill	do	1871 and 1872	38.36
9042	Nehemiah L. Hill, Lilly, Ill	do	1872 and 1874	1.34
9043	William M. Kirkpatrick, Lima, Ill	do	1866 and 1868	215.67
9044	William C. Willey, Limerick, Ill	do	do	24.52
	do	do	1872 and 1874	42.54
9045	Johnson Trexler, Linder, Ill	do	do	9.28
9046	William W. Gifford, Lisbon, Ill	do	1870 and 1872	53.89
9047	James De Witt, Littleton, Ill	do	1866 and 1867	17.45
9048	W. H. Windon, jr., Littleton, Ill	do	1867 and 1868	26.79
9049	D. Agnew, Littleton, Ill	do	1872 and 1874	19.89
9050	R. P. Wellion, Little York, Ill	do	1868 and 1869	14.82
	do	do	1866 and 1868	54.43
9051	William Muncy, Little York, Ill	do	1869 and 1870	29.66
	do	do	1872 and 1873	46.85
9052	John Clark, Livingston, Ill	do	1866 and 1868	57.56
	do	do	1870 and 1872	12.30
9053	William S. Colburn, Loami, Ill	do	1866 and 1868	95.82
	do	do	1870 and 1872	39.56
	do	do	1872 and 1874	30.34
9054	Fletcher Joy, Lodi Station, Ill	do	1866	26.14
9055	Edwin Brown, Lodi Station, Ill	do	1866 and 1868	113.34
	do	do	1868 and 1869	72.72
9056	Solomon White, jr., Lodi Station, Ill	do	1871 and 1872	88.16
9057	Fernando C. Van Vlack, Lodi Station, Ill	do	1872	41.76
9058	Elias Pritchard, Logan, Ill	do	1866 and 1868	46.82
9059	Harvey H. Adams, Logan, Ill	do	1871 and 1872	25.50
	do	do	1872 and 1874	20.30
9060	John Hawthorn, Logansport, Ill	do	1866 and 1868	42.92
	do	do	1868 and 1870	11.06
	do	do	1870 and 1872	5.40
9061	Henry W. Long, London City, Ill	do	1866 and 1868	32.74
	do	do	1870 and 1872	9.54
9062	Andrew Anderson, Lone Tree, Ill	do	1866 and 1868	3.98
	do	do	1868 and 1870	4.20
	do	do	1872 and 1874	3.56
9063	John P. Hillerby, Long, Ill	do	1871 and 1872	10.06
9064	Charles Stempel, Long Grove, Ill	do	1866 and 1868	24.50
	do	do	1870 and 1872	31.06
	do	do	1872 and 1874	12.36
9065	E. L. Wheeler, Long Point, Ill	do	1866 and 1868	14.66
9066	Jacob Acker, Loram, Ill	do	1866 and 1867	35.42
9068	Solomon A. Frey, Loram, Ill	do	1868	11.80
9068	Solomon A. Frey, Loram, Ill	do	1870 and 1872	13.56
	do	do	1872 and 1874	12.82
9069	Elijah Wingate, Lovington, Ill	do	1866 and 1868	75.06
9070	Frederick Darmstatter, Lowland, Ill	do	1868 and 1870	12.56
9071	J. E. Dodds, Low Point, Ill	do	1866 and 1868	76.04
9072	William C. Pond, Luda, Ill	do	1868 and 1870	7.26
9073	James Floyd, Lusk, Ill	do	1866 and 1868	8.52
9074	Russell Brown, Lynchburgh, Ill	do	do	27.88
	do	do	1868 and 1870	17.72
9075	John Carker, Lynnville, Ill	do	1866 and 1868	60.04
	do	do	1870 and 1872	34.10
	do	do	1872 and 1874	36.32
9076	W. F. Rocky, McConnell's Grove, Ill	do	1866 and 1868	28.86
	do	do	1870 and 1871	4.79
9077	Charles S. McNutt, McConnell's Grove, Ill.	do	1871 and 1872	7.99
	do	do	1872 and 1874	10.38
9078	David S. Smith, McHenry, Ill	do	1870 and 1872	91.56
	do	do	1872 and 1874	148.32
9079	William F. Scott, McLeansborough, Ill	do	1866 and 1868	277.81
	do	do	1868	30.58
9080	Jane W. Meader, McLeansborough, Ill	do	1869 and 1870	104.67
9081	Hosea Vise, Macedonia, Ill	do	1866 and 1868	18.50
	do	do	1870 and 1872	14.38
9082	John M. Duff, Macoupin's Station, Ill	do	1868 and 1869	3.68
9083	C. W. Harbough, Madonnaville, Ill	do	1872 and 1874	15.54
9084	D. Levanway, Magnolia, Ill	do	do	78.72
9085	William Jeffrey, Mainville, Ill	do	1868 and 1870	5.60
	do	do	1870 and 1872	7.80
9086	Rebecca E. Mumford, Majority Point, Ill.	do	1868 and 1869	20.78

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9087	James N. Beacon, Majority Point, Ill	Compensation of postmasters readjusted, etc.	1870 and 1872	$46.69
9088	T. H. Page, Maden, Ill	do	do	73.56
	do	do	1872 and 1874	66.14
9089	J. N. Hyde, Malugin's Grove	do	1866 and 1867	24.97
9090	M. H. Smith, Manchester, Ill	do	1866 and 1868	165.46
	do	do	1872 and 1874	61.27
9091	Simeon Lee, Manie, Ill	do	1867 and 1868	22.09
9092	E. A. Rosher, Manito, Ill	do	1869 and 1870	30.45
9093	Robert Marshall, Maple Grove, Ill	do	1866 and 1868	13.80
9094	J. B. Crabill, Maquon, Ill	do	do	70.86
9095	O. S. Jenks, Marengo, Ill	do	do	402.92
	do	do	1870 and 1872	221.84
9096	George W. Greene, Marietta, Ill	do	1867 and 1868	17.62
	do	do	1870 and 1872	47.14
9097	N. V. Calvert, Marion, Ill	do	1866	48.46
9098	M. E. Hamilton, Marissa, Ill	do	1872 and 1874	28.16
9099	Job A. Race, Maroa, Ill	do	1872 and 1873	35.07
9100	Oliver P. Walker, Marrowbone, Ill	do	1870 and 1871	7.86
9101	W. P. Howland, Martinsburgh, Ill	do	1866 and 1868	15.90
	do	do	1868 and 1870	7.32
	do	do	1870 and 1872	6.76
	do	do	1872 and 1874	19.50
9102	J. H. Curtis, Martinsville, Ill	do	1868	2.43
9103	H. C. Howell, Martinsville, Ill	do	1872 and 1873	119.98
9104	Frederick Dilg, Mascoutah, Ill	do	1870 and 1872	121.88
9105	John H. Cleveland, Mason City, Ill	do	1870	131.56
9106	Sallie Sullivan, Mason City, Ill	do	1871 and 1872	394.66
9107	Alba E. Marsh, Matteson, Ill	do	1868	28.33
9108	Simon Miller, Matteson, Ill	do	1866 and 1867	63.58
9109	Charles Maynard, Maynardsville, Ill	do	1866	5.12
	do	do	1870	1.13
	do	do	1870 and 1872	2.93
9110	Charles E. Huston, Marzon, Ill	do	1867 and 1868	9.57
9111	Frank B. Foster, Marzon, Ill	do	1866 and 1867	5.75
9112	Morris Bird, Mechanicsburgh, Ill	do	1866 and 1868	134.40
	do	do	1868 and 1870	68.36
	do	do	1870 and 1872	142.64
9113	do	do		91.96
9114	B. F. Dengler, Melrose, Ill	do		13.86
	do	do		11.47
9115	Stafford Smith, Meredosia, Ill	do		15.94
9116	H. W. Hitt, Merritt, Ill	do		22.80
9117	E. R. Davis, Middletown, Ill	do		31.33
9118	Milton Rayburn, Middletown, Ill	do		41.77
9119	R. A. Rayburn, Middletown, Ill	do		10.44
	do	do		51.06
9120	R. W. Combs, Midway, Ill	do		12.07
9121	J. W. Swarts, Midway, Ill	do		5.36
9122	J. R. Miles, Miles Station, Ill	do		16.68
9123	James Woodworth, Milford, Ill	do		87.19
9124	Jacob Budd, Millbrook, Ill	do		10.90
9125	R. S. Shumway, Milledgeville, Ill	do		171.74
	do	do		94.46
9126	Joseph A. Shipman, Milo, Ill	do		14.12
9127	William E. Butler, Milton, Ill	do		22.85
	do	do		24.04
9128	S. S. Allen, Minier, Ill	do		14.10
9129	Henry C. Dent, Minonk, Ill	do		28.29
9130	James W. Russell, Mitchellville, Ill	do		11.31
9131	Austin James, Mitchie, Ill	do		13.70
	do	do		3.74
9132	Samuel Jones, Moccasin, Ill	do		25.16
9133	Elisha Roley, Mode, Ill	do		3.18
	do	do		1.62
9134	Leopold Seidel, Monroe City, Ill	do		8.12
	do	do		49.20
9135	C. W. Twichell, Monterey, Ill	do		40.48
	do	do		33.66
9136	John Merian, Morlan's Grove, Ill	do		8.45
9137	Christian May Morton, Ill	do		3.78
9138	do	do	1870	33.58
9139	D. M. Jones, Moscow, Ill	do	1870 and 1872	26.70
	do	do	1872 and 1873	5.78
9140	James P. Lucas, Mossville, Ill	do	1866 and 1868	103.38
9141	George Mertz, Mound City, Ill	do	do	1,192.42
9142	M. P. Goodrich, Mount Auburn, Ill	do	do	60.86
9143	John H. Lawrence, Mount Auburn, Ill	do	1872 and 1874	31.12

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9144	Rudolph K. Steers, Mount Carmel, Ill	Compensation of postmasters readjusted, etc.	1866 and 1868	$404.72
	do	do	1870 and 1872	241.56
	do	do	1872 and 1874	248.74
9145	Van R. Price, Mount Erie, Ill	do	1866 and 1868	177.34
	do	do	1868 and 1870	27.84
	do	do	1870 and 1872	57.32
	do	do	1872 and 1874	35.02
9146	Larned Davis, Mount Palatine, Ill	do	do	35.54
9147	Morgan Stokes, Mount Pleasant, Ill	do	1868 and 1870	10.60
9148	S. Linn Butler, Mount Pulaski, Ill	do	1866	8.51
9149	Samuel K. Latham, Mount Vernon, Ill	do	1866 and 1868	297.56
9150	George W. Brouse, Mulberry Grove, Ill	do	do	75.70
9151	Robert E. Criswill, Murrayville, Ill	do	1871 and 1872	49.11
9152	A. A. Mitchell, Naples, Ill	do	1866 and 1868	120.51
9153	E. W. Nelson, Natrona, Ill	do	1870 and 1872	71.96
	do	do	1872 and 1874	35.66
9154	William E. Smith, Nebo, Ill	do	1866	4.01
9155	Albert Cook, Newark, Ill	do	do	29.44
9156	D. A. Munger, Newark, Ill	do	1866 and 1867	59.14
9157	James R. Boswell, New Baltimore, Ill	do	1866 and 1868	12.62
	do	do	1868 and 1870	2.89
	do	do	1870 and 1871	1.63
9158	Charles Martin, New Bedford, Ill	do	1866 and 1867	33.73
9159	Washington L. Hay, New Bedford, Ill	do	1867 and 1868	70.97
	do	do	1873 and 1874	15.56
9160	John Foutch, New Berlin, Ill	do	1872 and 1873	20.27
9161	do	do	1869 and 1870	38.36
9162	R. H. Price, New Berlin, Ill	do	1868 and 1869	27.20
9163	Thos. McDow, Newburn, Ill	do	1866 and 1868	25.14
9164	R. H. Pollard, New Columbia, Ill	do	1868 and 1870	6.02
9165	J. P. Choat, New Columbia, Ill	do	1873 and 1874	3.98
9166	Alonzo Foster, New Douglas, Ill	do	1866 and 1868	16.64
9167	Wm. M. Branson, New Franklin, Ill	do	1872 and 1874	11.06
9168	Wm. Taylor, New Genesee, Ill	do	1870 and 1872	10.38
9169	Jules B. Queanel, New Hartford, Ill	do	1866	12.47
9170	Geo. A. Jones, New Hartford, Ill	do	1866	12.47
9171	Jerome Hassell, New Hartford, Ill	do	1867 and 1868	74.82
	do	do	1868 and 1869	6.50
9172	Wm. C. Hemphill, New Hartford, Ill	do	1869 and 1870	10.82
	do	do	1870 and 1872	21.24
	do	do	1872 and 1873	13.44
9173	John Kaley, New Hebron, Ill	do	1866 and 1868	8.34
	do	do	1868 and 1870	6.24
	do	do	1870 and 1872	22.16
	do	do	1872 and 1874	6.84
9174	Chas. R. Hogeboom, New Lebanon, Ill	do	1867 and 1868	7.79
	do	do	1870 and 1872	6.96
9175	Ebenezer Simpson, New Liberty, Ill	do	1868 and 1870	212.34
9176	John G. Beardsley, New Middleton, Ill	do	1866 and 1867	17.30
9177	Martin Beaver, New Middleton, Ill	do	1867 and 1868	36.16
9178	Lloyd Thomas, New Philadelphia, Ill	do	1868 and 1870	3.20
9179	Myron J. Brown, Newport, Ill	do	1868	1.89
9180	Geo. W. Smith, Newman, Ill	do	1872 and 1874	24.42
9181	Henry L. Bush, News, Ill	do	1870 and 1872	15.52
9182	C. H. Bridges, Niantic, Ill	do	do	92.75
9183	John Andrew, New Salem, Ill	do	1866 and 1868	95.20
	do	do	1872 and 1874	78.80
9184	Nancy A. Burridge, North Plato, Ill	do	1866 and 1867	6.19
9185	Wm. M. Dailey, North Prairie, Ill	do	1868	4.12
9186	Geo. M. Evans, Norwood, Ill	do	1866 and 1868	30.71
	do	do	1872 and 1874	80.06
9187	Wm. Taylor, Nora, Ill	do	1870 and 1872	190.38
9188	Ithamas Daboll, North Hampton, Ill	do	1868 and 1870	4.13
	do	do	1866 and 1868	30.10
9189	Ovee Rosdail, Norway, Ill	do	1866 and 1867	12.11
9190	Chas. J. Borchimus, Norway, Ill	do	1867 and 1868	15.17
	do	do	1868 and 1869	19.94
	do	do	1871 and 1867	72.75
9191	G. W. Forrest, Oakley, Ill	do	1866 and 1868	34.25
9192	David Baughman, Oak Point, Ill	do	do	13.06
	do	do	1870 and 1872	11.23
	do	do	1872 and 1874	11.34
9193	Seneca Winters, Oak Ridge, Ill	do	1866 and 1868	6.38
	do	do	1870 and 1872	4.53
9194	John D. Smith, Oblong, Ill	do	1866	16.12
9195	Frank Langworthy, Ohio, Ill	do	1867 and 1868	13.89
9196	Jacob Wendt, Old Ripley, Ill	do	do	34.18

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9197	Ira Putney, Olena, Ill	Compensation of postmasters readjusted, etc.	1866 and 1868	$63.94
9198	R. F. Baldwin, Omego, Ill	do	do	46.96
	do	do	1868 and 1870	21.06
	do	do	1870 and 1872	5.72
	do	do	1874	7.67
9199	A. F. Weaver, Omph Ghent, Ill	do	1868 and 1870	6.44
	do	do	1870 and 1872	19.14
	do	do	1872 and 1874	14.70
9200	Ezekiel Buck, Oneco, Ill	do	1866 and 1868	22.70
	do	do	1870 and 1872	9.08
9201	Lewis Gibler, Oneco, Ill	do	1872	1.27
9202	C. B. Wetmore, Oneida, Ill	do	1866	84.49
9203	Ezra Shedd, Ontario, Ill	do	1866 and 1868	17.28
	do	do	1868 and 1870	8.28
	do	do	1872 and 1874	51.00
9204	P. Eastman, Ophir, Ill	do	1868 and 1869	1.28
9205	David R. Rubendall, Orangeville, Ill	do	1866 and 1868	74.62
9206	John Ritsman, Orangeville, Ill	do	1870 and 1872	94.36
	do	do		105.34
9207	Frederick Durr, Orion, Ill	do		49.11
9208	James Henderson, Orion, Ill	do		16.37
9209	Henry E. Dougherty, Otter Creek, Ill	do		130.30
	do	do		52.32
	do	do		32.76
9210	William Blair, Oxford, Ill	do		58.53
	do	do		79.86
9211	Chas. W. Green, Oquawka, Ill	do		400.86
9212	John Wood, Paine's Point, Ill	do		7.95
9213	E. C. Bray, Paine's Point, Ill	do		11.93
9214	T. W. Chiles, Palmyra, Ill	do		287.90
	do	do		36.54
	do	do		87.88
9215	B. W. Gray, Paloma, Ill	do		64.54
9216	Thomas W. Bray, Paloma, Ill	do		10.27
	do	do		3.70
9217	Waterman Reid, Palos, Ill	do		67.72
9218	Isaac L. Skinner, Pawla Station, Ill	do		111.78
9219	Wilson S. Fears, Parrish, Ill	do		27.13
9220	Cyrus Walker Patoka, Ill	do		241.24
9221	John F. Smith, Pawnee, Ill	do		45.42
	do	do		184.48
9222	Orson J. Moore, Payson, Ill	do		96.56
9223	Thomas S. Long, Pearl, Ill	do		39.58
9224	James B. Petrie, Pearl, Ill	do		10.43
9225	P. H. Lakin, Pearl Depot, Ill	do		13.20
	do	do		3.48
9226	Thomas Hance, Pecatonica, Ill	do		27.83
9227	Hezekiah Naylor, Pekin, Ill	do		84.92
9228	John Wheeler, Pellonia, Ill	do	1866 and 1868	44.16
	do	do	1868	1.76
9229	J. T. White, Pellonia, Ill	do	1868 and 1870	12.28
	do	do	1870 and 1871	6.43
9230	James Barnhart, Protone, Ill	do	1872 and 1874	70.98
9231	John Gringles, Perryton, Ill	do	1866 and 1867	5.68
9232	Albert Walker, Petersburgh, Ill	do	1866	16.53
9233	Alfred E. Mick, Petersburgh, Ill	do	1867 and 1868	122.64
9234	Jacob J. Hughes, Peyton, Ill	do	1868 and 1870	17.98
	do	do	1870 and 1872	34.98
	do	do	1872 and 1874	26.06
9235	James E. Clifford, Philliptown, Ill	do	1866 and 1867	31.04
9236	M. V. How, Philliptown, Ill	do	1867 and 1868	51.74
9237	R. F. Rambo, Piasa, Ill	do	1866 and 1867	28.43
9238	Alfred Glen, Pickwick, Ill	do	do	8.15
9239	William Seaver, Pierce, Ill	do	1866 and 1868	18.78
	do	do	1872 and 1873	2.71
9240	H. M. Purcell, Pinckneyville, Ill	do	1866	23.89
9241	J. L. Murphy, Pinckneyville, Ill	do	1866 and 1867	38.01
9242	William Thompson, Pingree Grove, Ill	do	1868 and 1868	8.62
9243	John W. Gardner, Pin Oak, Ill	do	1866 and 1867	13.09
9244	John P. Potter, Pin Oak, Ill	do	1872	5.98
	do	do	1872 and 1874	20.92
9245	J. Holley, Pin Oak, Ill	do	1870 and 1872	26.05
9246	L. D. Pitcher, Pitcherville, Ill	do	1870 and 1871	9.29
9247	Almon Brown, Pitcherville, Ill	do	1871 and 1872	18.59
	do	do	1872	4.07
9248	Winthrop Wright, Plainfield, Ill	do	1866	36.01
9249	Harvey R. Fraser, Plainfield, Ill	do	1867 and 1868	98.60

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9250	Albert B. Platt, Plattsville, Ill	Compensation of postmasters readjusted etc.	1872 and 1874	$48.60
9251	Harmon Phenix, Pleasant Grove, Ill	do	1868	5.14
9252	Jonathan Harris, Pleasant Grove, Ill	do	1868 and 1870	12.64
	do	do	1866 and 1868	29.84
9253	S. S. Thomas, Pleasant Hill, Ill	do	1866 and 1868	90.76
9254	L. H. Pohlman, Pleasant Mound, Ill	do	1872 and 1874	12.64
9255	William Raynor, Pleasant Plains, Ill	do	1866 and 1867	25.28
9256	Cyrus B. Denny, Pleasant Prairie, Ill	do	1866 and 1868	13.82
9257	William Miller, Pleasant Ridge, Ill	do	do	9.30
9258	Elizabeth Darr, Pleasant Valley, Ill	do	1873 and 1874	2.90
9259	Ebenezer Dimmick, Pleasant View, Ill	do	1866 and 1868	20.00
9260	F. F. Helms, Plum Hill, Ill	do	1870 and 1872	9.34
9261	William Stilliana, Plum River, Ill	do	1866 and 1867	53.36
9262	Horace B. Tyrrell, Plum River, Ill	do	1870 and 1872	49.04
9263	Samuel F. Haggard, Plymouth, Ill	do	1866 and 1868	111.21
9264	Samuel H. Challis, Pocahontas, Ill	do	do	68.34
9265	William Abernethy, Pontoosuc, Ill	do	do	22.54
	do	do	1870 and 1872	28.14
	do	do	1872 and 1874	86.66
9266	D. W. Sedwick, Pope Creek, Ill	do	1870	6.89
9267	W. H. Brooks, Poplar Grove, Ill	do	1866 and 1868	38.83
	do	do	1868 and 1870	35.60
9268	N. Belcher, Port Byron, Ill	do	1872 and 1874	106.04
	do	do	1866	41.31
9269	David Ziegler, Port Byron, Ill	do	1866 and 1868	205.87
9270	Abraham W. Green, Potosi, Ill	do	1873 and 1874	56.82
9271	Philo Kellogg, Prairie Centre, Ill	do	1870 and 1872	20.88
	do	do	1872 and 1874	35.56
9272	James H. Wilson, Prairie City, Ill	do	1867 and 1868	68.46
9273	James D. Sprigg, Prairie du Rocher, Ill	do	do	31.38
	do	do	1868 and 1870	34.62
	do	do	1870 and 1872	44.50
9274	C. K. Roe, Prairie Home, Ill	do	1872	3.07
	do	do	1872 and 1874	32.64
9275	James Koch, Prairie Home, Ill	do	1870 and 1871	8.69
9276	Levi Pitman, Pre-emption, Ill	do	1866 and 1868	122.42
	do	do	1868 and 1869	33.61
9277	Patterson Hall, Prentice, Ill	do	1866	2.40
9278	James C. Denny, Prentice, Ill	do	1866 and 1867	4.80
9279	John W. Auten, Princeville, Ill	do	1867	35.99
9280	Lucius B. Day, Princeville, Ill	do	1867 and 1868	108.74
9281	J. R. McCheaney, Prospect Park, Ill	do	1870 and 1872	30.62
9282	J. S. M. Beaver, Raleigh, Ill	do	1866 and 1867	80.17
9283	John B. Fielder, Randolph, Ill	do	1870 and 1872	17.38
9284	George F. Rowe, Rapids City, Ill	do	do	22.86
9285	Henry Smith, Reading, Ill	do	1868 and 1870	14.40
	do	do	1870 and 1872	12.02
9286	James Cupples, Reading, Ill	do	1873 and 1874	5.41
9287	S. B. Allen, Rectorville, Ill	do	1866 and 1868	17.94
	do	do	1868 and 1870	5.94
	do	do	1870 and 1872	6.78
	do	do	1872 and 1874	14.02
9288	John Glenn, Renault, Ill	do	1866	11.97
9289	F. W. Brickey, jr., Renault, Ill	do	1867 and 1868	35.89
9290	John Burkhardt, Renault, Ill	do	1871 and 1872	30.95
	do	do	1872 and 1874	25.40
9291	Nicholas Choat, Reynoldsburgh, Ill	do	1870	1.99
	do	do	1870 and 1872	40.78
	do	do	1872 and 1873	34.61
9292	W. Reynolds, Reynoldsburgh, Ill	do	1866 and 1868	95.74
	do	do	1868 and 1870	13.91
9293	Perry Howard, Richfield, Ill	do	1866 and 1868	28.82
9294	Tho. F. Anderson, Richland, Ill	do	1871 and 1872	8.22
9295	Philip E. Stevens, Richland Grove, Ill	do	1866 and 1868	18.54
	do	do	1870 and 1872	43.74
	do	do	1872 and 1874	26.52
9296	Reuben R. Stone, Richmond, Ill	do	1866	15.63
9297	Alfred P. Wells, Richmond, Ill	do	do	19.67
9298	J. S. Burrows, Richmond, Ill	do	1866 and 1868	140.32
9299	David A. Potter, Richmond, Ill	do	do	9.94
9300	Dan. B. Gartside, Ridge Prairie, Ill	do	1868 and 1870	76.36
9301	Charles W. Schroeder, Rio, Ill	do		29.50
9302	Swen T. Gibson, Rivoli, Ill	do		117.10
9303	Samuel Chase, Robin's Nest, Ill	do		13.06
	do	do		16.34
9304	J. D. Whitley, Robinson Mills, Ill	do		5.93
9305	Caleb B. Boyce, Rochelle, Ill	do		336.12

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9306	Milo R. Blodgett, Rock Bridge, Ill	Compensation of postmasters readjusted, etc.		$5.73
9307	H. M. Rocky, Rock Grove, Ill	do		25.61
9308	Gilbert J. Shaw, Rockport, Ill	do		82.02
9309	Hiram C. Todd, Rockville, Ill	do		69.24
	do	do		9.20
9310	T. S. Barnes, Roland, Ill	do		16.34
	do	do		42.42
	do	do		36.20
9311	Philip Nigh, Rook's Creek, Ill	do		15.40
9312	James McKee, Rook's Creek, Ill	do		13.40
9313	L. H. Turk, Rosecrans, Ill	do		6.18
5314	Asa Deming, Ross Grove, Ill	do		4.58
	do	do		6.78
9315	W. J. Henderson, Rossville, Ill	do		80.86
	do	do		65.49
9316	George Loftus, Rozelta, Ill	do		23.14
9317	George N. Townsend, Rush, Ill	do		24.48
9318	William Parker, Robinson, Ill	do		116.22
9319	Bonte H. Bontes, Robinson Mills, Ill	do		9.44
9320	J. S. McDaniel, Sagetown, Ill	do		216.20
9321	Cornelius Gooding, Saint Albans, Ill	do		4.18
	do	do		2.04
9322	T. L. Terry, Saint Augustine, Ill	do		29.57
9323	J. L. Davis, Saint Augustine, Ill	do		26.37
9324	William Metz, Saint Jacob, Ill	do		24.78
9325	Isaac Anderson, Saint Jacob, Ill	do		4.87
9326	Henry Rutter, Saint Libory, Ill	do	1866 and 1868	16.14
9327	Cornelius Crowley, Saint Mani, Ill	do	1866	4.76
9328	Nicholas Zopf, Saint Morgan, Ill	do	1869 and 1870	14.54
	do	do	1870 and 1872	11.80
	do	do	1872 and 1874	7.64
9329	Peter Mulhern, Saint Morgan, Ill	do	1868 and 1869	12.50
9330	J. M. Keltner, Salisbury, Ill	do	1867 and 1868	52.77
9331	Robert Reid, Saline Mines, Ill	do	1866 and 1868	18.16
	do	do	1870 and 1872	21.04
9332	H. S. Sherwood, Sand Lake, Ill	do	1866 and 1868	15.82
	do	do	1868 and 1870	21.74
	do	do	1870 and 1871	3.60
9333	William Edwards, Sandoval, Ill	do	1866	19.19
9334	Jacob Morlock, Sandoval, Ill	do	1866 and 1867	64.03
9335	Peter Defrics, San José, Ill	do	1867 and 1868	9.70
9336	William Ireland, Santa Fé, Ill	do	1872 and 1874	6.70
9337	G. L. Baker, Savoy, Ill	do	1873 and 1874	3.64
9338	William K. Stansbury, Saybrook, Ill	do	1870 and 1872	314.88
9339	L. Menke, Shaumburgh, Ill	do	1871 and 1872	5.08
	do	do	1872 and 1874	11.90
9340	Donald McFales, School, Ill	do	1866	1.62
9341	James W. Albertson, Sciota, Ill	do	1870 and 1871	82.03
9342	William A Westrop, Scottsville, Ill	do	1866 and 1868	93.12
9343	William Bratton, Selma Ill	do	1867 and 1868	44.37
	do	do	1868	8.07
9344	Ebenezer W. Frazier, Selma, Ill	do	1868 and 1870	53.10
	do	do	1870 and 1872	26.74
	do	do	1872 and 1874	28.40
9345	D. H. Underhill, Seneca, Ill	do	do	203.50
9346	Aaron T. Jackson, Shabbona Grove, Ill	do	1866 and 1868	87.50
	do	do	1870 and 1872	39.42
9347	J. J. Wetmore, Shabonier, Ill	do	1866 and 1867	30.09
9348	John C. Townley, Sharon, Ill	do	1866 and 1868	26.16
9349	John Carrigan, Sheffield, Ill	do	1866 and 1868	123.08
9350	C. A. Davis, Sheffield, Ill	do	1872 and 1874	99.76
9351	James Strosnider, Sheldon's Grove, Ill	do	1866 and 1868	14.94
9352	A. G. Britton, Sherburnville, Ill	do	1866 and 1867	17.46
9353	David Love, Sherburnville, Ill	do	1867 and 1868	17.46
9354	H. Lange, Shiloh, Ill	do	1870 and 1872	42.69
9355	James Pickett, Shiloh Hill, Ill	do	1866 and 1867	21.54
9356	Orange Baldwin, Shokokon, Ill	do	1866	6.43
9357	Antis Harvey, Shokokon, Ill	do	1866 and 1868	45.03
9358	Thomas G. Frost, Sigel, Ill	do	1870 and 1872	68.28
9359	James B. Miller, Smithville, Ill	do	1872 and 1874	24.66
9360	M. A. Smith, Snicarte, Ill	do	1870 and 1872	19.24
	do	do	1872 and 1874	11.64
9361	James M. Eaton, South America, Ill	do	1866 and 1868	23.86
	do	do	1868 and 1870	7.24
	do	do	1872 and 1874	5.78
9362	Alamson Hakes, Southampton, Ill	do	1866 and 1868	22.52
9363	Julius A. Porter, Southampton, Ill	do	1870 and 1872	14.46
	do	do	1872 and 1874	20.80

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9364	Robert W. Sherrod, Somerset, Ill	Compensation of postmasters readjusted, etc.	1870 and 1872	$16.23
9365	Henry Curtess, Somonauk, Ill	do	1866 and 1868	109.58
9366	John Cammack, South Northfield, Ill	do	1867 and 1868	9.38
9367	E. W. Gibbs, Southport, Ill	do	1870 and 1872	12.24
	do	do	1872 and 1874	9.86
9368	James M. Sparks, Spark's Hill, Ill	do	1866 and 1868	20.80
9369	T. E. Gapin, Sparland, Ill	do	1872 and 1874	117.70
9370	David A. McClintock, Sparta, Ill	do	1866 and 1868	348.58
9371	I. A. Newell, Specie Grove, Ill	do	do	9.61
9372	James E. Holmes, Spencer, Ill	do	do	12.20
9373	Emil Schaeber, Spring Bay, Ill	do	do	26.23
	do	do	1868	2.50
9374	Joseph Knoblauch, Springfield, Ill	do	1868 and 1870	17.53
	do	do	1872	3.48
9375	Willie Prigmore, Spring Garden, Ill	do	1866 and 1868	56.76
9376	C. P. Lamphere, Spring Hill, Ill	do	do	105.64
	do	do	1870 and 1871	8.56
9377	Cephas Wood, Stanford, Ill	do	1871 and 1872	108.72
	do	do	1872 and 1874	63.03
9378	G. S. Johnson, Stillman Valley, Ill	do	1868	4.96
9379	Darwin L. Goode, Stirrup Grove, Ill	do	1866 and 1868	20.90
	do	do	1870 and 1872	23.18
	do	do	1872 and 1874	21.88
9380	Elijah Cross, Stone Fort, Ill	do	1866 and 1868	60.36
9381	Alexander Vickers, Stone Fort, Ill	do	1871 and 1872	43.06
9382	Nicholas Sanders, Stonington, Ill	do	1866 and 1868	15.20
9383	Franklin Harris, Stone's Prairie, Ill	do	1873 and 1874	26.25
9384	R. L. Judy, Strington, Ill	do	1866 and 1868	27.24
9385	Jacob B. Barton, Sublette, Ill	do	do	405.40
9386	do	do	1868 and 1870	321.52
9387	do	do	1870 and 1872	304.18
9388	J. W. Page, Sues, Ill	do	1871 and 1872	20.67
	do	do	1872 and 1874	35.96
9389	O. F. Taylor, Sugar Creek, Ill	do	do	58.50
9390	David E. Sheerer, Sulphur Springs, Ill	do	1868 and 1869	5.18
9391	Henry L. Anderson, Summer Hill, Ill	do	1872 and 1874	19.36
9392	R. J. Allison, Summit, Ill	do	1866 and 1868	37.24
	do	do	1868 and 1870	26.04
	do	do	1870 and 1872	20.35
9393	George W. Horton, Summum, Ill	do	1866 and 1868	87.60
	do	do	1868 and 1869	19.47
9394	John Schenck, Summum, Ill	do	1869	19.60
9395	David Leighty, Sumner, Ill	do	1866	28.89
9396	B. F. Whipp, Sweetwater, Ill	do	1866 and 1868	55.06
	do	do	1868 and 1870	37.54
9397	Edward Moore, Table Grove, Ill	do	1866 and 1868	60.46
	do	do	1870 and 1872	34.62
9398	Franklin S. Thrapp, Tallula, Ill	do	1866 and 1868	129.80
9399	John McLaren, Tamarack, Ill	do	1870	4.26
	do	do	1870 and 1872	44.06
	do	do	1872	3.73
9400	John A. Squier, Taylorville, Ill	do	1872	78.82
9401	Asa K. Owen, Tennessee, Ill	do	1866 and 1868	91.06
9402	do	do	1870 and 1872	47.38
9403	Clemens Uptman, Tentopolis, Ill	do	1866 and 1868	46.95
9404	Jeremiah Beal, Terre Haute, Ill	do	1866 and 1868	38.00
	do	do	1868 and 1869	39.64
9405	A. F. Beal, Terre Haute, Ill	do	1873 and 1874	43.47
9406	Martin Brown, Thebis, Ill	do	1870	.65
	do	do	1870 and 1872	49.94
	do	do	1872 and 1874	5.70
9407	Noah Kinsey, Thomasburgh, Ill	do	1868 and 1869	6.57
9408	Phillip Schwab, Thornton, Ill	do	1869 and 1870	44.00
9409	Edward J. Jones, Timber, Ill	do	1866 and 1868	81.68
9410	Jonas H. More, Tiskilwa, Ill	do	1866	67.20
9411	Mark B. Bain, Tobacco, Ill	do	1866 and 1867	12.90
9412	Samuel Porter, Topeka, Ill	do	1866 and 1868	29.98
	do	do	1868 and 1869	17.26
9413	W. H. Eckard, Topeka, Ill	do	1869	7.60
9414	D. W. Flowers, Topeka, Ill	do	1869 and 1870	21.07
	do	do	1870 and 1872	91.48
9415	M. Middleworth, Town Hill, Ill	do	1869 and 1870	51.19
	do	do	1870 and 1872	41.24
9416	D. M. Smiley, Town Line, Ill	do	1866 and 1867	1.90
9417	Thomas Parks, Triumph, Ill	do	1872 and 1874	45.58
9418	John H. Gove, Trivoli, Ill	do	1866 and 1868	128.04
9419	Caleb Johnson, Troy, Ill	do	1870 and 1872	82.82

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9420	C. F. Foster, Troy Grove, Ill	Compensation of postmasters readjusted, etc.	1870 and 1872	$57.82
9421	John W. Mortimer, Tullamore, Ill	do	1866 and 1868	8.18
9422	George E. Fletcher, Time, Ill	do	1872 and 1874	19.50
9423	Thomas W. Jeffery, Ullin, Ill	do	1866 and 1868	89.14
9424	do	do	1870 and 1872	40.94
9425	John Kent, Union Grove, Ill	do	1868 and 1870	16.58
	do	do	1866 and 1868	76.06
9426	J. E. Schobey, Union Hill, Ill	do	1872 and 1874	23.06
	do	do	1868 and 1870	6.34
	do	do	1870 and 1872	19.26
9427	J. M. Rumbaugh, Ursa, Ill	do	1870 and 1872	60.19
9428	Frank Dale, Van Buren, Ill	do	1868	1.75
	do	do	1868 and 1870	3.76
	do	do	1870 and 1872	10.06
9429	Lewis S. Solomon, Vancil's Point, Ill	do	1870 and 1872	3.50
9430	C. H. Showwalter, Vermillion, Ill	do	1866 and 1868	52.56
9431	Peter F. Johansen, Veni, Ill	do	1866 and 1868	13.04
	do	do	1872 and 1874	3.32
9432	Henry Robinson, Venice, Ill	do	1866 and 1868	42.12
	do	do	1870 and 1872	98.98
	do	do	1872 and 1874	95.42
9433	J. W. Wesson, Victor Centre, Ill	do	1872 and 1874	12.00
9434	John Beattie, Virden, Ill	do	1867 and 1868	269.33
9435	Peter F. Johansen, Veni, Ill	do	1870 and 1872	6.74
9436	J. N. Hogg, Vienna, Ill	do	1870	4.47
9437	E. A. Pease, Victoria, Ill	do	1866 and 1868	201.28
9438	Richard H. Ballinger, Virden, Ill	do	1869 and 1870	318.59
9439	John N. Wilson, Virginia, Ill	do	1870 and 1872	295.38
9440	Samuel McCreery, Wales, Ill	do	1866 and 1867	25.41
9441	Samuel G. Nelson, Wallingford, Ill	do	1868	1.92
	do	do	1866 and 1868	19.44
9442	Franklin Cruzen, Walnut Hill, Ill	do	1868	14.81
	do	do	1867 and 1868	33.84
9443	Joseph M. Smith, Walnut Hill, Ill	do	1866 and 1867	56.40
9444	Seward C. Nelson, Wapello, Ill	do	1868	13.33
	do	do	1870 and 1872	82.62
9445	George Hipwell, Wauconda, Ill	do	1866 and 1868	65.89
9446	H. R. Farr, Washington Centre, Ill	do	1868 and 1869	17.95
9447	Charles J. Pochmann, Washington Heights, Ill.	do	1872 and 1874	73.51
9448	H. Künster, Waterloo, Ill	do	1866 and 1868	119.22
9449	John Irwin, Watson, Ill	do	1866 and 1868	42.60
9450	Albert D. Trull, Wayne, Ill	do	1866 and 1868	60.16
9451	J. M. Sampson, Waynesville, Ill	do	1866 and 1868	127.64
9452	Joel Howd, Webster, Ill	do	1872 and 1874	8.50
	do	do	1866 and 1868	40.62
	do	do	1868 and 1870	12.46
9453	W. H. Lord, West Hale, Ill	do	1866 and 1867	4.27
9454	Moses Crosley, West Hallock, Ill	do	1872 and 1874	4.07
9455	C. W. Young, West Jersey, Ill	do	1866 and 1868	37.04
9456	S. J. Fox, West Jersey, Ill	do	1870 and 1872	24.94
	do	do	1872 and 1874	41.32
9457	John Harrower, West Northfield, Ill	do	1866 and 1868	13.79
9458	David Wigle, West Point, Ill	do	1866 and 1868	60.20
9459	George Lopp, West Salem, Ill	do	1866 and 1868	47.86
	do	do	1870 and 1872	30.80
	do	do	1872 and 1874	61.94
9460	Charles Vogt, Wheeling, Ill	do	1866 and 1868	79.02
9461	William S. Colson, Whitley's Point, Ill	do	1866 and 1867	10.80
9462	D. F. Bristow, Whitley's Point, Ill	do	1867 and 1868	12.74
	do	do	1870 and 1872	19.10
9463	Charles W. Elder, Williamsville, Ill	do	1867 and 1868	79.73
9464	Richard M. Lawrence, Williamsville, Ill	do	1868	15.95
9465	Benj. F. Ellsworth, Willow Creek, Ill	do	1866 and 1868	23.58
9466	William Condit, Winchester, Ill	do	1868 and 1870	19.76
9467	Charles E. Peck, Winnetka, Ill	do	1866	32.47
	do	do	1866 and 1868	22.70
9468	R. M. Graves, Winnetka, Ill	do	1869 and 1870	4.56
9469	William T. Carson, Woodburn, Ill	do	1867 and 1868	60.94
	do	do	1868	8.25
9470	Jacob Clark, Woodburn, Ill	do	1866 and 1867	36.56
9471	W. H. Wells, Woodbury, Ill	do	do	21.83
9472	John W. Cecil, Woodville, Ill	do	do	59.34
9473	J. J. Hilleman, Wool, Ill	do	do	66.78
9474	John H. Anderson, Woosung, Ill	do	1868	22.89
9475	Wilson J. Fisher, Woosung, Ill	do	1869 and 1870	68.67
9476	O. W. Giles, Wyanet, Ill	do	1866 and 1867	60.28

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9477	William Youngson, Wyanet, Ill	Compensation of postmasters readjusted, etc.	1867 and 1868	$36.17
9478	John B. Brown, Wyoming, Ill	do	do	97.90
9479	Jobe Morris, Xenia, Ill	do	do	157.03
9480	Stephen Stevens, Yale, Ill	do	1866 and 1867	10.29
9481	Z. H. McCubbins, Yale, Ill	do	1867 and 1868	10.29
9482	do	do	1870 and 1872	11.25
9483	Silas Andrews, Yellow Creek, Ill	do	1866 and 1868	48.72
9484	do	do	do	12.76
9485	Jacob Higley, Yellow Creek, Ill	do	1869 and 1870	25.53
9486	George S. Kleckner, Yellow Creek, Ill	do	1870	5.47
9487	do	do	1872 and 1874	93.22
9488	Solon Bailey, Yellow Head Grove, Ill	do	1866 and 1868	13.68
9489	Diogenes Pettit, Yellow Head Grove, Ill	do	1871	9.84
9490	John Gault, York Neck, Ill	do	1870 and 1872	8.56
9491	do	do	1866 and 1868	29.89
9492	E. A. Ladue, Yorktown, Ill	do	1866	9.42
9493	Franklin Rees, Zanesville, Ill	do	1866 and 1867	30.54
9494	Harrison Sharp, Zanesville, Ill	do	1871 and 1872	12.48
	do	do	1872	5.11
	Total compensation of postmasters readjusted under act of March 3, 1883 (originally reported in House Ex. Doc. No. 130, Forty-ninth Congress, second session).			58,226.58
9506	R. B. Bascom, Aberdeen, Ind	Compensation of postmasters readjusted under act of March 3, 1883, payable from deficiencies in postal revenues, 1884 and prior years.	1866 and 1868	60.97
	do	do	1870	2.86
9507	James O. Brook, Aberdeen, Ind	do	1871 and 1872	8.65
	do	do	1872 and 1873	6.85
9508	Samuel Rosengarten, Acton, Ind	do	1866 and 1868	89.44
9509	Nathan T. Parker, Acton, Ind	do	1871 and 1872	40.84
	do	do	1872 and 1873	22.55
9510	Isaac L. Woodward, Adams, Ind	do	1866 and 1868	78.74
	do	do	1870 and 1871	7.36
9511	W. C. McCoy, Adams, Ind	do	1871 and 1872	19.29
9512	Horatio S. Keith, Alton, Ind	do	1866 and 1867	15.36
9513	Milo Bright, Akron, Ind	do	1872 and 1874	39.70
9514	James Stubbens, Alamo, Ind	do	1866 and 1868	46.32
	do	do	1870 and 1872	28.90
	do	do	1872 and 1874	29.64
9515	Ezra Maynard, Albany, Ind	do	1866 and 1868	39.86
	do	do	1868 and 1869	7.23
9516	A. J. Kimmell, Albion, Ind	do	1870	23.22
9517	J. W. Spears, Alert, Ind	do	do	2.95
	do	do	1870 and 1872	50.62
9518	George W. Spann, Alexandria, Ind	do	1867 and 1868	86.34
9519	J. Johnson, Alexandria, Ind	do	1872 and 1874	28.66
9520	Samuel A. Patterson, Alfonte, Ind	do	1870 and 1872	17.25
9521	Joseph Cohen, Alfonte, Ind	do	1872	4.40
	do	do	1872 and 1874	9.76
9522	H. H. Maze, Alquina, Ind	do	1866 and 1868	20.92
	do	do	1868 and 1869	6.79
9523	Milton A. Rice, Alquina, Ind	do	1870	2.12
	do	do	do	4.27
9524	H. H. Maze, Alquina, Ind	do	1872 and 1872	3.62
	do	do	1872 and 1874	16.14
9525	George F. Greeson, Alto, Ind	do	1871 and 1872	4.79
9526	A. B. Blackman, America, Ind	do	1866 and 1868	129.92
	do	do	1868 and 1869	19.68
9527	J. H. Scott, America, Ind	do	1871 and 1872	10.34
	do	do	1872 and 1874	8.68
9528	Hiram Pearson, Amboy, Ind	do	1869 and 1870	6.99
	do	do	1870 and 1872	12.53
9529	James Gordon, Amsterdam, Ind	do	1866 and 1868	18.84
	do	do	1868 and 1870	6.86
	do	do	1872 and 1873	5.14
9530	Henry Kauts, Andrews, Ind	do	1873 and 1874	49.55
9531	Alfred Osborn, Angola, Ind	do	1866 and 1868	184.04
9532	Jesse B. Connelly, Annapolis, Ind	do	1866	20.42
9533	Fleury F. Keith, Armiesburgh, Ind	do	1766 and 1868	64.78
9534	Lawrence Paul, Armstrong, Ind	do	1870 and 1872	10.38
9535	John Currie, Arney, Ind	do	1866 and 1867	15.42
9536	G. W. Ferguson, Ash Grove, Ind	do	1868	.92
9537	Henry Work, Ash Grove, Ind	do	1868 and 1870	4.90
	do	do	1870 and 1872	24.92

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9537	Henry Work, Ash Grove, Ind	Compensation of postmasters readjusted, etc.	1872 and 1874	$2.26
9538	Wesley Snodgrass, Ashland, Ind	do	1866 and 1868	32.32
	do	do	1872 and 1874	18.78
9539	Silas F. Kyle, Ashley's Mills, Ind	do	1866 and 1868	25.20
	do	do	1870 and 1872	17.04
	do	do	1872 and 1874	8.64
9540	Martin Boyer, Atkinsonville, Ind	do	1868 and 1869	19.76
9541	Cyrus B. Morford, Attica, Ind	do	1867 and 1868	181.11
9542	S. W. Sprott, Auburn, Ind	do	1867	18.12
9543	W. E. Rush, Auburn, Ind	do	1868	36.24
9544	James E. Morris, Austin, Ind	do	1866	46.43
9545	Thomas Hughbanks, Austin, Ind	do	1866 and 1867	112.43
9546	Eliza Swarthout, Avilla, Ind	do	1866 and 1868	24.96
	do	do	1872 and 1874	10.84
9547	Henry H. Moore, Aydelott, Ind	do	1868 and 1870	4.02
	do	do	1870 and 1872	31.04
	do	do	1872 and 1873	6.72
9548	Joel Newson, Azalia, Ind	do	1866 and 1868	16.92
	do	do	1870 and 1872	25.98
	do	do	1872 and 1874	29.40
9549	Samuel Ball, Ballstown, Ind	do	1867 and 1868	24.21
9550	Nathaniel B. Cory, Ballstown, Ind	do	1866 and 1867	15.57
9551	Samuel Ball, Ballstown, Ind	do	1868 and 1870	13.80
	do	do	1870 and 1872	17.82
9552	Morgan Ware, Barber's Mills, Ind	do	1874	1.15
9553	J. S. Farris, Bargersville, Ind	do	1872 and 1874	27.64
	do	do	1870 and 1872	19.54
	do	do	1870	2.08
9554	W. H. H. Benefiel, Barbersville, Ind	do	1866 and 1868	24.12
9555	Lazarus Thompson, Bartonia, Ind	do	1871 and 1872	5.89
	do	do	1872 and 1873	21.51
9556	James Worth, Bateham, Ind	do	1866 and 1868	20.74
9557	Edward Roberts, Bear Branch, Ind	do	1866 and 1867	17.80
9558	Benjamin J. Grant, Bear Branch, Ind	do	1867	17.80
9559	F. W. Housemeier, Bear Branch, Ind	do	1869 and 1870	12.34
	do	do	1870 and 1872	5.38
9560	John H. Smith, Bear Creek	do	1866	12.14
9561	William H. Prillman, Bear Creek, Ind	do	1867 and 1868	33.81
	do	do	1872 and 1874	20.20
	do	do	1870 and 1872	14.18
9562	William V. Snyder, Beaver City, Ind	do	1869 and 1870	5.81
9563	John Weaver, Beaver Dam, Ind	do	1866 and 1868	28.59
9564	David Beck, Beck's Mills, Ind	do	do	6.06
	do	do	1868 and 1870	.82
	do	do	1870 and 1872	4.46
	do	do	1872 and 1874	4.24
9565	James C. Carlton, Bedford, Ind	do	1866 and 1868	422.18
9566	Homer F. Burger, Belleville, Ind	do	do	82.28
	do	do	1870 and 1872	46.93
9567	Jane Whitford, Bellmore, Ind	do	1866 and 1867	7.02
9568	James W. Breckenridge, Bellmore, Ind	do	1867 and 1868	11.70
9569	Samuel B. Weaver, Bennett's Switch, Ind.	do	1866 and 1868	25.76
	do	do	1868 and 1869	14.37
9570	James P. Marsh, Bennington, Ind	do	1870 and 1872	15.68
	do	do	1872 and 1874	27.66
9571	Nathan Batts, Benton, Ind	do	1866 and 1867	14.95
9572	Thomas C. Brown, Benton, Ind	do	1867 and 1868	22.21
	do	do	1870 and 1872	15.78
9573	Anthony Holmes, Berlin, Ind	do	1872 and 1874	45.00
	do	do	1870 and 1872	40.82
	do	do	1868	4.27
9574	Jesse E. Jones, Bethel, Ind	do	1867 and 1868	30.47
9575	Samuel Pernet, Bethleham, Ind	do	1866 and 1868	51.34
9576	B. W. Rice, Bethlehem, Ind	do	1870 and 1872	14.06
9577	Francis Knight, Bigelow's Mills, Ind	do	1866 and 1868	17.56
	do	do	1868	5.85
9578	Abram Rose, Billingsville, Ind	do	1870 and 1872	32.90
	do	do	1872 and 1874	23.64
9579	Isaac Caulk, Brimingham, Ind	do	do	11.70
9580	John B. Deig, Black Hawk Mills, Ind	do	1866 and 1868	40.44
	do	do	1868 and 1870	5.88
9581	George Nelgren, Blairsville, Ind	do	1866 and 1868	42.88
9582	John Pickard, Bloomingdale, Ind	do	1870 and 1872	32.08
9583	Wm. W. Pettigrew, Blooming Grove, Ind.	do	1866 and 1868	47.72
9584	Ancil B. Phillips, Bloomingsport, Ind	do	1866 and 1867	23.56
9585	Jesse Cook, Bloomingsport, Ind	do	1872	2.61

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9585	Jesse Cook, Bloomingsport, Ind	Compensation of postmasters readjusted, etc.	1872 and 1873	$12.53
9586	J. G. McPheeters, jr., Bloomington, Ind.	do	1867	55.04
9587	Francis Kuehn, Blue Creek, Ind	do	1866 and 1867	6.06
9588	Peter Fransman, Blue Creek, Ind	do	1871 and 1872	2.54
	do	do	1872 and 1874	10.22
9589	John Mathews, Blue Grass, Ind	do	1866	15.00
9590	Isaiah Ball, Blue Grass, Ind	do	1867 and 1868	45.01
	do	do	1870 and 1872	4.16
	do	do	1872 and 1874	9.1[illegible]
9591	Abigail Delts, Blue Lick, Ind	do	1866 and 1868	42.[illegible]
9592	H. J. Tressler, Bluff Creek, Ind	do	do	21.[illegible]
	do	do	1870 and 1872	18.46
	do	do	1872 and 1874	6.20
9593	Jacob Sutton, Bluff Point, Ind	do	1873 and 1874	5.44
9594	Mary A. Miller, Bono, Ind	do	1872 and 1874	14.14
9595	John Fishburn, Boon Grove, Ind	do	1866 and 1867	1.00
9596	J. W. B. Moore, Boonville, Ind	do	4866 and 1868	359.10
9597	W. J. L. Hemenway, Boonville, Ind	do	1872	15.87
9598	Ephraim Ebright, Boonville, Ind	do	1870 and 1871	31.72
9599	David C. Jenks, Boston, Ind	do	1868 and 1870	8.35
9600	Jacob F. Rinehart, Boston, Ind	do	1870	1.19
9601	J. E. Houghton, Bourbon, Ind	do	1868 and 1860	39.75
9602	H. D. Weaver, Bourbon, Ind	do	1869 and 1870	61.00
9603	Daniel Hiesten, Boundary, Ind	do	1868 and 1868	22.24
	do	do	1870 and 1872	9.48
	do	do	1872 and 1874	75.78
9604	Dickson Crow, Bovine, Ind	do	1866	8.31
9605	Samuel Miles, Bowling Green, Ind	do	1866 and 1868	241.40
	do	do	1870 and 1872	96.80
9606	Cyrus Burrows, Boxley, Ind	do	1866	20.68
9607	Josiah W. Drake, Boxley, Ind	do	1866 and 1867	35.28
9608	D. M. Moore, Boxley, Ind	do	1867 and 1868	66.99
	do	do	1868 and 1870	33.74
	do	do	1870 and 1872	32.34
9609	do	do	1872	4.61
9610	Benjamin John, Boydston's Mills, Ind	do	1866 and 1868	63.96
	do	do	1868 and 1870	19.99
	do	do	1870 and 1872	8.26
	do	do	1872 and 1874	7.30
9611	A. B. Alexander, Bozard, Ind	do	1866	5.40
9612	Asa S. Blood, Bracken, Ind	do	1872 and 1874	7.76
9613	N. H. Hon, Bradford, Ind	do	1867 and 1868	30.74
	do	do	1868 and 1870	12.56
	do	do	1870	1.75
9614	Henry Hardzog, Bremen, Ind	do	1866 and 1867	33.39
9615	Moses Keyser, Bremen, Ind	do	1867 and 1868	23.11
	do	do	1870 and 1872	39.54
9616	David Marsh, Brewersville, Ind	do	1866 and 1868	53.94
	do	do	1870 and 1872	19.04
9617	Robert McClung, Brick Mills, Ind	do	1866 and 1867	7.98
9618	Richard W. Thompson, Bridgeport, Ind.	do	1866 and 1868	59.28
9619	Daniel Duree, Bridgeton, Ind	do	1870 and 1872	64.22
	do	do	1872 and 1874	24.72
9620	Joseph Haddock, Bright, Ind	do	1870	3.17
9621	Henry R. Crandall, Brighton, Ind	do	1866 and 1868	11.64
	do	do	1868 and 1870	4.98
9622	Jennette P. Crandall, Brighton, Ind	do	1870 and 1872	9.18
9623	Samuel Sheets, Broad Ripple, Ind	do	1867 and 1868	17.31
	do	do	1868 and 1870	7.30
	do	do	1870 and 1872	26.94
	do	do	1872 and 1874	16.34
9624	F. E. Ross, Brook, Ind	do	1867 and 1868	8.88
9625	Abraham Griggs, Brooklyn, Ind	do	1866 and 1867	28.95
9626	Frances M. Hughes, Brownsburgh, Ind.	do	1866 and 1868	239.35
	do	do	1872 and 1874	56.78
9627	Albert Benton, Brownstown, Ind	do	1866	20.31
9628	Oscar F. Sewell, Brownstown, Ind	do	1866 and 1868	130.21
9629	Charles W. Ware, Brown's Valley, Ind	do	1870 and 1872	5.98
9630	Benneville Stamm, Bruce's Lake, Ind	do	1866 and 1868	44.76
9631	John T. Willis, Bruceville, Ind	do	do	122.46
	do	do	1872 and 1874	44.88
9632	Edward Barnes, Bruin's Cross Roads, Ind	do	1866 and 1868	7.80
	do	do	1870 and 1872	14.06
	do	do	1872 and 1874	15.72
9633	Lewis Westerman, Brunswick, Ind	do	1866	3.97
9634	Harmon C. Beckman, Brunswick, Ind	do	1867 and 1868	11.92
	do	do	1870 and 1872	31.88
9635	A. M. Spaulding, Brushy Prairie, Ind	do	do	18.[illegible]

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9636	John M. Selleck, Bryantsburgh, Ind	Compensation of postmasters readjusted, etc.	1873 and 1874	$17.13
	do	do	1868 and 1870	7.64
	do	do	1870 and 1872	9.42
9637	Thos. J. Clark, Bryant's Creek, Ind	do	1866 and 1867	6.04
9638	Robert Houston, Bryant's Creek, Ind	do	1867 and 1868	10.07
9639	J. W. Lyons, Bryantsville, Ind	do	1872 and 1874	3.00
9640	W. H. Everman, Burlington, Ind	do	1867 and 1868	61.89
	do	do	1868 and 1870	19.72
	do	do	1870 and 1872	34.98
9641	James C. Renny, Burnsville, Ind	do	1868 and 1870	10.64
	do	do	1870 and 1871	9.80
9642	John W. Winner, Burnett's Creek, Ind	do	1866 and 1868	10.95
9643	Eli R. Herman, Burnett's Creek, Ind	do	1866 and 1867	7.97
9644	John W. Herman, Burnett's Creek, Ind	do	1867 and 1868	16.58
9645	Wm. W. Boggs, Burnside, Ind	do	1866 and 1868	49.92
	do	do	1870 and 1872	3.52
9646	Geo. Sires, Burrows, Ind	do	1867 and 1868	17.86
	do	do	1868 and 1870	13.78
	do	do	1870 and 1872	15.30
	do	do	1872 and 1874	24.92
9647	H. Hogue, Butler, Ind	do	1866 and 1868	7.23
9648	Solomon Rogers, Butler, Ind	do	do	158.86
9649	Emmor Ware, Butlerville, Ind	do	do	84.48
9650	Abraham Levi, Byrneville, Ind	do	do	10.90
	do	do	1869 and 1870	3.56
	do	do	1870 and 1872	5.80
	do	do	1872 and 1874	2.98
9651	Chas. Willis, Callao, Ind	do	1867 and 1868	10.42
9652	Samuel T. Platt, sr., Cannelton, Ind	do	1866 and 1867	147.86
9653	W. H. Pollard, Campbellsburgh, Ind	do	1866 and 1869	65.00
9654	Thos. P. Harris, Canoper, Ind	do	1866 and 1868	11.31
	do	do	1886	.47
9655	Bernard P. Harris, Canoper, Ind	do	1872 and 1873	5.72
9656	John H. Trueblood, Canton, Ind	do	1866 and 1868	15.48
	do	do	1872 and 1874	44.12
9657	Archie Brown, Carpentersville, Ind	do	1866 and 1867	26.73
9658	Drury Holt, jr., Carthage, Ind	do	1867 and 1868	34.77
	do	do	1870 and 1872	60.92
9659	W. W. Irons, Cartersburgh, Ind	do	1872 and 1874	31.06
9660	Jonathan T. Lamb, Cary, Ind	do	1866 and 1868	8.20
9661	J. R. Anderson, Castleton, Ind	do	1870 and 1872	84.53
9662	Jesse M. Jones, Cataract, Ind	do	1871 and 1872	8.48
9663	John B. Dowd, Catlin, Ind	do	1866	10.76
9664	Elizabeth Hays, Cedar Grove, Ind	do	1870 and 1872	16.51
9665	M. M. Esty, Cedar Lake, Ind	do	1866	3.84
9666	George Hasenour, Celestine, Ind	do	1868 and 1870	14.46
	do	do	1870 and 1872	27.32
9667	Alvah L. Vickry, Centre, Ind	do	do	43.22
9668	John H. Reeder, Centre Point, Ind	do	1866 and 1867	26.18
9669	Henry M. Pierce, Centre Point, Ind	do	1867 and 1868	23.11
9670	Cynthia E. Tuttle, Centreville, Ind	do	1868 and 1869	88.38
9671	J. M. Johnston, Cerro Gordo, Ind	do	1866 and 1868	42.10
	do	do	1868 and 1870	16.70
	do	do	1870 and 1872	23.82
	do	do	1872 and 1874	18.24
9672	John Faris, Chalmers, Ind	do	1870 and 1871	7.95
9673	Solomon Benninghoff, Chamberlain, Ind	do	1868 and 1869	15.81
9674	Joseph R. Moore, Chambersburgh, Ind	do	1866 and 1868	81.94
9675	Jeremiah Goddard, Charlottesville, Ind	do	do	86.08
9676	John Hanly, Chauncy, Ind	do	1872 and 1873	88.20
9677	Nathan S. Williams, Chester, Ind	do	1867 and 1868	18.48
	do	do	1868	4.69
9678	J. W. Martin, Chester, Ind	do	1869 and 1870	28.18
	do	do	1870 and 1872	57.06
	do	do	1872 and 1874	26.42
9679	R. J. Hall, Chesterfield, Ind	do	1870 and 1872	22.74
9680	James K. Hawes, Chestnut Hill, Ind	do	1866 and 1868	6.58
	do	do	1870 and 1872	11.10
	do	do	1872 and 1874	8.20
9681	N. C. Hall, Chili, Ind	do	1866 and 1867	50.73
	do	do	1872 and 1874	21.42
9682	Edward Reeves, Cicero, Ind	do	1866 and 1868	111.86
9683	William Porter, Cicero, Ind	do	1871 and 1872	25.02
9684	Isaac Shumm, Clarksburgh, Ind	do	1870 and 1872	43.98
	do	do	1872 and 1874	36.26
9685	Clement Correll, Clark's Prairie, Ind	do	1866 and 1868	37.74
	do	do	1868 and 1870	26.44
9686	Anderson Adler, Cleona, Ind	do	1866 and 1868	40.18

Estimates for the payment of claims.—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9686	Anderson Adler, Cleona, Ind	Compensation of postmasters readjusted, etc.	1870 and 1871	$3.80
9687	William P. Taggart, Cleona, Ind	do	1871 and 1872	3.80
	do	do	1872 and 1874	4.72
9688	John A. Radabaugh, Clifton, Ind	do	1868	2.85
9689	John Payton, Clinton, Ind	do	1866 and 1867	251.04
9690	Thomas Henderson, Clifty, Ind	do	do	38.26
9691	P. Davis, Cloverdale, Ind	do	do	44.65
9692	Stephen S. Haviland, Cloverdale, Ind	do	1867 and 1868	62.64
	do	do	1868 and 1869	57.96
9693	Daniel Clouser, Clouser's Mills Ind	do	1868 and 1870	2.70
	do	do	1870 and 1872	3.80
9694	Jacob A. Carpenter, Cloverland, Ind	do	1868 and 1870	14.88
	do	do	1872 and 1874	13.80
9695	Enoch M. Woody, Coatsville, Ind	do	1866 and 1868	24.04
9696	D. H. Hopkins, Coffee Creek, Ind	do	do	81.52
9697	John T. Taylor, Coffee Creek, Ind	do	1866 and 1867	27.17
9698	Timothy Wilson, Coffin Station, Ind	do	1866	18.54
9699	George W. Hill, Colburn, Ind	do	1872 and 1874	16.08
9700	J. H. Blacker, Colfax, Ind	do	1866 and 1867	79.38
9701	Mary Bosworth, College Corner, Ind	do	1866 and 1868	58.32
9702	A. W. Morris, Coloma, Ind	do	1871 and 1872	22.78
9703	George W. Tucker, Columbia, Ind	do	1866 and 1868	19.94
9704	John T. Drury, Columbia City, Ind	do	1866 and 1867	17.11
9705	A. F. Ruch, Columbia City, Ind	do	1866 and 1868	144.55
9706	Orson H. Woodworth, Columbia City, Ind.	do	1870 and 1872	423.24
9707	A. R. Morrison, Connersville, Ind	do	1866	50.08
9708	C. C. Isaacs, Cortland, Ind	do	1866 and 1868	32.20
9709	Henry Haskins, Corunna, Ind	do	do	106.06
	do	do	1868	8.93
9710	C. M. Miller, Corydon, Ind	do	1866	56.96
9711	George W. Miller, Corydon, Ind	do	1867 and 1868	226.02
9712	H. H. Miller, Corydon, Ind	do	1866	7.38
9713	Nimrod S. Reynolds, Corydon, Ind	do	1872 and 1874	145.47
9714	Jacob Tice, Covington, Ind	do	1866 and 1868	283.26
9715	John M. Cox, Cox's Mills Ind	do	do	58.75
9716	Elihu Cox, Cox's Mills, Ind	do	1868 and 1870	21.21
9717	John Weaver, Craig, Ind	do	1868	6.02
	do	do	1871 and 1882	7.38
	do	do	1872 and 1874	8.34
9718	Henry C. Austin, Crooked Creek, Ind	do	1866 and 1868	50.26
9719	Jacob Baker, Cromwell, Ind	do	1868	2.19
	do	do	1868 and 1870	29.40
9720	Benjamin Gloyd, Cross Plains, Ind	do	1866 and 1868	50.10
9721	George King, Crothersville, Ind	do	1867 and 1868	69.29
9722	Moses Crane Culver, Culver's Station, Ind.	do	1866 and 1868	59.68
9723	Geo. W. Lowe, Cynthiana, Ind	do	do	124.70
	do	do	1868 and 1870	22.32
	do	do	1870 and 1872	35.46
9724	James Gray, Daleville, Ind	do	1866 and 1867	38.77
9725	Wm. S. Chamness, Dalton, Ind	do	1866 and 1868	54.24
	do	do	1870 and 1872	9.29
9726	Isaac Reynolds, Dalton, Ind	do	1873 and 1874	5.12
9727	Samuel R. Craddick, Danville, Ind	do	1866 and 1867	44.48
9728	Mary Davis, Danville, Ind	do	1867 and 1868	77.91
9729	M. M. Knox, Darlington, Ind	do	1866 and 1868	95.71
9730	Thomas J. Toole, Dayton, Ind	do	1868	41.42
	do	do	1870 and 1871	15.63
9731	T. T. Dorwin, Decatur, Ind	do	1866	13.93
9732	Robt. McCracken, Decker, Ind	do	1872 and 1874	14.00
9733	Nathan Wood, Deep River, Ind	do	1866 and 1868	55.94
	do	do	1872 and 1874	28.90
9734	Evan Michael, Deerfield, Ind	do	1866	11.72
9735	Olney Whipple, Deerfield, Ind	do	1866 and 1868	34.25
9736	George Wilt, Deerfield, Ind	do	1868	11.15
	do	do	do	9.37
9737	I. C. Sutton, Deerfield, Ind	do	1868 and 1869	35.42
9738	Saml. M. Graham, Delphi, Ind	do	1866 and 1867	108.08
9739	John C. Hannum, Delphi, Ind	do	1867 and 1868	289.74
9740	B. F. Holliday, Deming, Ind	do	1870 and 1872	2.27
9741	Samuel Hargis, Derby, Ind	do	1866	5.77
9742	Peter Murthee, Derby, Ind	do	1866 and 1868	32.66
9743	Samuel M. Weaver, Dillsborough, Ind	do	1866 and 1867	92.55
9744	Isaac R. Dunnaway, Dillsborough, Ind	do	1867 and 1868	70.01
9745	Wm. Rowland, Dillsborough, Ind	do	1872 and 1874	51.26
9746	Samuel H. Jacob, Ditney Hill and Ireland, Ind.	do	1866 and 1868	24.25
9747	J. B. Higgins, Door Village, Ind	do	do	$3.46

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9748	Stephen M. Minnich, Dora, Ind	Compensation of postmasters readjusted, etc.	1866 and 1867	$38.72
9749	Thomas Brown, Dover Hill, Ind	do	do	33.39
9750	Nathan P. Calvin, Dover Hill, Ind	do	1872 and 1874	79.68
9751	James Speedy, Down Hill, Ind	do	1866 and 1868	13.92
	do	do	1870 and 1872	1.90
	do	do	1872 and 1874	2.14
9752	Francis Hollowell, Drewersburgh, Ind	do	1870 and 1872	15.94
9753	Wm. G. Harris, Duff, Ind	do	do	3.82
9754	L. B. Wilson, Dunkirk, Ind	do	1870	22.89
9755	Wm. R. Pearce, Dunreith, Ind	do	1872 and 1874	77.92
9756	Francis E. Hendricks, Dupont, Ind	do	1869 and 1870	19.87
	do	do	1872 and 1873	24.48
9757	Wm. Brown, Eagle Creek, Ind	do	1866 and 1868	12.14
9758	Joseph B. Collier, Eagle Town, Ind	do	1867 and 1868	20.88
9759	Henry S. Wells, Eagle Town, Ind	do	1872 and 1874	16.96
	do	do	1870 and 1872	15.71
9760	Philander S. Sage, East Enterprise Ind	do	1866 and 1867	15.72
9761	Jonathan B. Clark, Economy, Ind	do	1871 and 1872	36.52
9762	Roberson Jarrett, Eden, Ind	do	1866 and 1868	16.74
9763	Thomas Bartlett, Edwardsport, Ind	do	1867 and 1868	77.08
	do	do	1868	1.85
9764	Jacob F. Scudder, Edwardsport, Ind	do	1868 and 1869	8.77
9765	Chas. C. Azbell, Edwardsport, Ind	do	1869 and 1870	10.96
9766	Virgil D. Keaton, Edwardsport, Ind	do	1870	2.74
	do	do	1870 and 1871	26.02
9767	Elias H. Compton, Elizabeth, Ind	do	1866	24.23
9768	Frederick W. Fleshman, Elizabeth, Ind.	do	1866 and 1867	79.49
9769	George Bohall, Elkinsville, Ind	do	1866 and 1868	18.56
9770	Louis Elkins, Elkinsville, Ind	do	1868	2.65
	do	do	1868 and 1870	1.28
	do	do	1870 and 1872	10.00
9771	G. W. Elrod, Elrod, Ind	do	1866 and 1868	34.90
9772	J. O. Graham, Enterprise, Ind	do	1866	11.05
9773	James H. Jones, Enterprise, Ind	do	1867 and 1868	27.64
	do	do	1868 and 1870	43.29
9774	Anthony Dodds, Enterprise, Ind	do	1870	4.75
	do	do	1872 and 1874	36.14
9775	Wm. W. Ferguson, Erie, Ind	do	1870 and 1872	14.30
	do	do	1872 and 1874	12.78
9776	John W. Davis, Etna Green, Ind	do	1866	29.34
9777	Samuel Melick, Etna Green, Ind	do	1867 and 1868	73.08
9778	Moses J. Coons, Etna Green, Ind	do	1870 and 1872	37.40
9779	F. G. Irwin, Eugene, Ind	do	do	52.32
	do	do	1872 and 1874	47.32
9780	E. J. Thompson, Everton, Ind	do	1866 and 1868	49.37
	do	do	1870 and 1872	34.08
	do	do	1872 and 1874	20.50
9781	John A. Hughes, Fairfield, Ind	do	1866 and 1867	19.34
9782	Thos. W. Hayward, Fairfield, Ind	do	1867 and 1868	27.14
9783	Jerome Reynolds, Fairfield Centre, Ind	do	1866 and 1868	12.54
	do	do	1870 and 1872	10.66
	do	do	1872 and 1874	23.76
9784	James N. Elliott, Fairmount, Ind	do	1866 and 1868	115.10
	do	do	1868	6.93
9785	Milton Crowell, Fairmount, Ind	do	1871 and 1872	72.82
	do	do	1870 and 1871	15.16
9786	Wm. E. Starbuck, Fairview, Ind	do	1870 and 1872	18.76
	do	do	1872 and 1873	9.59
9787	Geo. McGriff, Farmland, Ind	do	1866	32.68
9788	J. C. Williamson, Farmland, Ind	do	1866 and 1867	206.99
9789	Dixon Rubottom, Farmers Institute, Ind	do	1869 and 1870	18.80
	do	do	1870 and 1872	9.58
	do	do	1872 and 1874	18.74
9790	Anthony Opp, Farmers Retreat, Ind	do	1866	4.28
9791	Garrett Bosse, Farmers Retreat, Ind	do	1866 and 1868	29.97
9792	Anthony Opp, Farmers Retreat, Ind	do	1870 and 1872	19.14
9793	Wm. H. H. Welch, Farrabns Station, Ind	do	1868 and 1870	9.20
9794	Robert Boyd, Fayetteville, Ind	do	1866 and 1868	36.22
	do	do	1872 and 1873	2.70
9795	Wm. R. Mitchell, Fish Creek, Ind	do	1868 and 1870	3.68
	do	do	1870 and 1872	33.00
	do	do	1872 and 1874	20.02
9796	George Dunham, Fishersburgh, Ind	do	1868	5.08
	do	do	1870 and 1872	10.30
9797	John Crandell, Flint, Ind	do	1866 and 1868	80.50
	do	do	1872 and 1874	23.62

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9798	L. Bledsoe, Florence, Ind	Compensation of postmasters readjusted, etc.	1866 and 1868	$81.00
	do	do	1870 and 1872	55.34
	do	do	1872 and 1874	62.18
9799	Jackson B. Olinger, Flowerville, Ind	do	1871 and 1872	19.73
9800	Thomas B. Moore, Flowerville, Ind	do	1866 and 1868	9.02
	do	do	1868 and 1870	13.80
9801	Jackson B. Olinger, Flowerville, Ind	do	1872 and 1874	11.91
9802	Wm. Tripure, Floyd Knobs, Ind	do	1866 and 1867	12.48
9803	Benj. Folsom, Folsomville, Ind	do	1866 and 1868	94.26
9804	Reuben Gibson, Forest Hill, Ind	do	do	67.42
	do	do	1870 and 1872	28.60
	do	do	1872	9.86
9805	Thomas J. Reed, Fort Ritner, Ind	do	1866 and 1868	34.36
	do	do	1868 and 1870	11.66
9806	Alexander Foster, Foster's Ridge, Ind	do	1866 and 1867	7.90
9807	Hiram Foster, Foster's Ridge, Ind	do	1867 and 1868	15.22
	do	do	1868 and 1870	4.04
9808	Thomas R. Noel, Fortville, Ind	do	1866 and 1868	193.00
	do	do	1870 and 1872	70.72
9809	Harrison J. Reed, Fountain, Ind	do	1867 and 1868	5.51
	do	do	1871 and 1872	4.79
9810	Mortimer Wood, Fountain, Ind	do	1872 and 1873	5.52
9811	Daniel K. Hanna, Fox, Ind	do	1866 and 1867	32.35
9812	Jacob B. Nelson, Fox, Ind	do	1871 and 1872	6.09
9813	Hardy Bearsley, Francisco, Ind	do	1866 and 1868	148.00
	do	do	1870 and 1872	28.42
	do	do	1872 and 1874	15.14
9814	George W. Demaree, Franklin, Ind	do	1872 and 1873	140.71
9815	William Kelley, Frankfort, Ind	do	1866 and 1868	169.21
9816	John C. Brewer, Francesville, Ind	do	1866	16.58
9817	William J. Stevens, Francesville, Ind	do	1868	33.16
	do	do	1868 and 1869	31.05
9818	R. B. Landrum, Freedom, Ind	do	1866 and 1868	37.56
9819	William H. Conrad, Fredonia, Ind	do	1868 and 1870	3.74
	do	do	1872 and 1874	9.52
9820	Michael A. C. Robertson, Freelandville, Ind.	do	1869 and 1870	17.67
9821	Reuben W. Hudson, Freetown, Ind	do	1866	7.21
9822	Grafton Mannel, Freetown, Ind	do	1867 and 1868	27.83
9823	Charles Havens, Fremont, Ind	do	1866 and 1868	159.52
9824	Fortune L. Bailey, Freeport, Ind	do	1867 and 1868	8.51
9825	Henry Schmolsmire, Friendship, Ind	do	1872 and 1874	12.78
9826	John C. Hartman, Fulda, Ind	do	1866 and 1867	8.07
9827	Bernard Schneider, Fulda, Ind	do	1867 and 1868	13.48
9828	Francis Richter, Fulton, Ind	do	1866 and 1868	50.37
9829	Robert Aken, Fulton, Ind	do	1867 and 1868	33.53
	do	do	1868 and 1870	14.16
	do	do	1872 and 1874	18.52
9830	Robert S. Neat, Galena, Ind	do	1867 and 1868	23.92
	do	do	1868 and 1870	6.42
	do	do	1870 and 1872	6.96
9831	Andrew J. Shoffer, Galveston, Ind	do	1866 and 1868	40.76
9832	Frederick Haas, Gentryville, Ind	do	1876	22.83
9833	James Jones, Gentryville, Ind	do	1866 and 1867	45.49
9834	John Hiley, Gentryville, Ind	do	1867 and 1868	68.35
9835	John H. Thomas, Georgetown, Ind	do	1866 and 1868	45.30
	do	do	1868 and 1870	6.16
	do	do	1870 and 1872	10.20
9836	Charles Fausett, Germantown, Ind	do	1866 and 1867	11.12
9837	George W. Stanley, Germantown, Ind	do	1867 and 1868	19.64
9838	John J. Mohler, Gilead, Ind	do	do	55.05
9839	Joseph Hess, Gibson Station, Ind	do	1872 and 1874	11.44
9840	William L. Bivins, Goshen, Ind	do	1866 and 1868	498.28
9841	John R. Kerr, Gosport, Ind	do	do	245.62
9842	C. K. Lard, Graham, Ind	do	1866 and 1867	29.88
9843	Sevier Wilson, Graham, Ind	do	1868 and 1870	7.28
9844	Alice Chapman, Graham, Ind	do	1870 and 1872	11.00
9845	John Curry, Grand View, Ind	do	1866 and 1867	32.06
9846	Nathan Hendricks, Grantsburgh, Ind	do	1866 and 1868	36.32
	do	do	1868 and 1870	3.09
9847	John Dragoo, Granville, Ind	do	1866 and 1868	16.82
	do	do	1868 and 1870	10.76
9848	Thomas Benton, Graysville, Ind	do	do	26.78
	do	do	1872 and 1874	16.50
9849	George H. Drum, Greensburgh, Ind	do	do	315.56
9850	H. J. Williams, Greenfield, Ind	do	1866	46.49
9851	William H. Gooding, Greenfield, Ind	do	1866 and 1868	190.16
9852	Marlin L. Roller, Green's Fork, Ind	do	do	41.72

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9853	R. A. New, Green Oak, Ind	Compensation of postmasters readjusted, etc.	1873 and 1874	$1.84
9854	Elizabeth McGuire, Greenwood, Ind	do	1866 and 1868	155.18
	do	do	1868 and 1869	41.14
9855	H. Shryork, Greenwood, Ind	do	1869 and 1870	55.19
9856	Salmon Hall, Groveland, Ind	do	1866 and 1868	42.68
9857	John McClure, Groves, Ind	do	do	42.80
	do	do	1868 and 1870	17.68
9858	J. N. Graves, Groves, Ind	do	1872 and 1874	12.82
9859	Hamilton Conaway, Guionsville, Ind	do	1868 and 1870	15.92
9860	Eli Kinson, Guthrie, Ind	do	1872 and 1873	.73
9861	Watkins Williams, Hagerstown, Ind	do	1866 and 1867	45.57
9862	William J. Spencer, Hagerstown, Ind	do	1867 and 1868	34.25
9863	Margaret Spencer, Hagerstown, Ind	do	1868	17.97
9864	Henry O. Current, Half Way, Ind	do	1866	10.02
9865	Michael Bader, Half Way, Ind	do	1867 and 1868	30.10
	do	do	1870 and 1871	14.15
9866	John Shaffer, Hall's Corners, Ind	do	1866 and 1868	19.88
	do	do	1870 and 1872	10.04
9867	William A. Rima, Hamilton, Ind	do	1866 and 1868	66.04
9868	Jake A. Horner, Hancock, Ind	do	1870 and 1872	9.72
	do	do	1872 and 1874	7.68
9869	Isaac C. Boyden, Hardinsburgh, Ind	do	1871 and 1872	33.72
9870	Joseph D. Stopher, Harlan, Ind	do	1867 and 1868	31.00
9871	John L. Stevens, Harmony, Ind	do	1868 and 1869	32.69
	do	do	1870 and 1872	92.67
	do	do	1872 and 1874	55.46
9872	Noah Frick, Harrisville, Ind	do	1866 and 1868	33.34
9873	C. H. Kirk, Harrison, Ind	do	1866	5.98
9874	Levi Thomason, Harrison, Ind	do	1866 and 1868	42.31
9875	C. R. Per Due, Harrodsburgh, Ind	do	do	32.08
9876	A. Y. Merryman, Hartford, Ind	do	do	18.34
	do	do	1868 and 1870	7.34
	do	do	1870 and 1872	12.40
	do	do	1872 and 1873	8.62
9877	John Long, Hausertown, Ind	do	1866 and 1868	79.92
	do	do	1870 and 1872	33.46
	do	do	1872 and 1874	14.68
9878	Catharine Hays, Hawpatch, Ind	do	1866	2.48
9879	Thomas S. Trettipp, Hawpatch, Ind	do	1866 and 1868	12.23
9880	Frank R. Meyer, Hayesville, Ind	do	do	22.76
	do	do	1868 and 1870	9.88
9881	Wilber Morehouse, Hector, Ind	do	1866 and 1868	12.34
	do	do	1870 and 1872	6.80
9882	Morgan Smedley, Heffren, Ind	do	1872 and 1874	5.28
9883	Sarah J. Goheen, Heller's Corners, Ind	do	1866 and 1868	45.92
	do	do	1868 and 1869	2.28
9884	David S. Campbell, Heller's Corners, Ind	do	1873 and 1874	3.24
9885	Jacob Conrad, Hepton, Ind	do	1870 and 1872	8.42
9886	Christian Koeber, Herman, Ind	do	1866 and 1867	3.75
9887	John Behm, Herman, Ind	do	1867 and 1868	6.25
	do	do	1868 and 1870	9.08
	do	do	1870 and 1871	37.38
9888	H. G. Porter, Hickory Point, Ind	do	1866 and 1868	18.28
9889	H. Langford, Highland, Ind	do	1867 and 1868	17.08
9890	Eli C. Hornaday, High Rock, Ind	do	1868 and 1869	.12
9891	Hiram C. Wyand, Hillsborough, Ind	do	1866 and 1868	64.40
	do	do	1868 and 1869	14.40
9892	John M. McBrown, Hillsborough, Ind	do	1870	4.80
9893	W. M. Trueblood, Hitchcock's Station, Ind.	do	1866 and 1868	9.94
	do	do	1868 and 1870	12.66
9894	John C. Mander, Hobart, Ind	do	1872 and 1874	31.07
9895	Samuel D. Alexander, Hobbieville, Ind	do	1866	14.30
9896	William B. Evans, Hobbieville, Ind	do	1867 and 1868	43.00
9897	H. Kinz, Holland, Ind	do	1886	1.67
9898	William Heitman, Holland, Ind	do	1866 and 1868	11.69
9899	H. Kanz, Holland, Ind	do	1870 and 1872	11.06
9900	David Ellis, Holman, Ind	do	1867 and 1868	5.38
9901	Manly S. Cady, Holton, Ind	do	1866 and 1868	148.54
	do	do	1868 and 1870	21.40
9902	J. T. Robertson, Homer, Ind	do	1873 and 1874	6.34
9903	Geo. M. Rowlison, Home, Ind	do	1866 and 1868	21.42
	do	do	1868 and 1870	5.94
	do	do	1870 and 1872	24.50
	do	do	1872 and 1874	5.40
9904	Z. G. Tomlinson, Honey Creek, Ind	do	1866 and 1868	26.24
9905	Jesse M. Browning, Houston, Ind	do	1868	10.05
9906	Alex. W. De Long, Huntington, Ind	do	1866 and 1868	357.96

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9907	Ernst Pickhardt, Huntingburgh, Ind	Compensation of postmasters readjusted, etc.	1866	$13.37
9908	Herman Rothert, Huntingburgh, Ind	do	1866 and 1868	93.63
9909	James O. Beardsley, Huntertown, Ind	do	1873 and 1874	48.72
9910	John T. Barnes, Idaville, Ind	do	1867 and 1868	65.06
9911	Samuel A. McCully, Idaville, Ind	do	1866 and 1867	34.88
9912	David James, Independence, Ind	do	1866	3.43
9913	Samuel M. Reid, Independence, Ind	do	1866 and 1868	24.02
9914	Robert B. Lauk, Independence, Ind	do	1870 and 1872	27.02
9915	Peter H. Johnson, Indian Village, Ind	do	do	6.19
9916	M. B. Dillon, Ireland, Ind	do	1866 and 1867	20.64
9917	Harvey Green, Ireland, Ind	do	1867 and 1868	28.97
9918	Lewis T. Bond, Jacksonburg, Ind	do	1870 and 1872	17.04
9919	Harriett Worstell, Jacksonville, Ind	do	1866 and 1867	12.78
9920	Thomas Smith, Jadden, Ind	do	1866 and 1868	23.84
	do	do	1868	.56
9921	Geo. W. White, Jalapa, Ind	do	do	11.55
9922	Corbin Jackson, Jalapa, Ind	do	1866 and 1868	50.49
9923	Martin Friedman, Jasper, Ind	do	1866	14.40
9924	Joseph Egg, Jasper, Ind	do	1866 and 1868	165.98
9925	Geo. W. Glah, Jefferson, Ind	do	do	99.12
	do	do	1870 and 1872	84.34
	do	do	1872 and 1874	22.50
9926	Geo. W. Twoomey, Jeffersonville, Ind	do	1866	415.94
9927	James N. Patterson, Jeffersonville, Ind	do	1867 and 1868	512.80
9928	Jonathan J. Griffin, Jerome, Ind	do	1866 and 1868	106.10
9929	Levi Huber, Jordan Village, Ind	do	do	11.06
	do	do	1870 and 1872	6.40
9930	Mathew F. Woessner, Jonesville, Ind	do	1872 and 1874	28.30
9931	E. Barnes, Judson, Ind	do	1870 and 1872	13.46
9932	Wm. Swift, Kelso, Ind	do	1866 and 1868	30.78
	do	do	1870 and 1872	16.04
9933	James J. Lash, Kendallville, Ind	do	1866 and 1868	829.35
9934	Job Hughes, Kent, Ind	do	do	47.76
	do	do	1868	1.58
9935	I. C. Earhart, Kent, Ind	do	1868 and 1869	5.61
9936	W. H. Montgomery, Kent, Ind	do	1869 and 1870	4.75
	do	do	1872 and 1874	18.98
9937	Israel Underwood, Kewanna, Ind	do	1867 and 1868	61.88
9938	R. Shaw, Kingsbury, Ind	do	1866 and 1868	26.66
9939	S. R. Stewart, Kingston, Ind	do	do	38.36
9940	Geo. F. Purdy, Kirks Cross Roads, Ind	do	1867 and 1868	17.52
9941	John S. Bender, Knox, Ind	do	1866	7.58
9942	Joseph Anderson, Laconia, Ind	do	1866 and 1868	153.88
	do	do	1868 and 1870	31.72
	do	do	1870 and 1872	54.20
9943	B. F. Lines, La Fountaine, Ind	do	1866 and 1868	87.38
	do	do	1868	1.95
9944	James T. Tiller, La Gro, Ind	do	1866 and 1867	24.27
9945	Henry Townsend, La Gro, Ind	do	1867 and 1868	59.05
9946	Peter Bender, Laketon, Ind	do	1866 and 1868	26.86
	do	do	1870 and 1872	8.80
9947	John B. Craft, Lancaster, Ind	do	1866 and 1868	28.06
9948	Christian Bechtel, Land, Ind	do	1870 and 1872	9.32
9949	Joseph H. Riley, Laurel, Ind	do	1866	9.50
9950	O. W. Voorhis, Lawrence, Ind	do	1866 and 1868	64.00
9951	John E. Peckenpaugh, Leavenworth, Ind.	do	1866	56.62
9952	William M. Ellsworth, Leavenworth, Ind.	do	1867 and 1868	169.86
9953	J. A. Smith, Leesburg, Ind	do	1866 and 1867	74.17
9954	William Hunter, Leesville, Ind	do	1866 and 1868	92.26
	do	do	1868 and 1870	11.10
	do	do	1872 and 1873	4.75
9955	Henry Monyhan, Leipsic, Ind	do	1866 and 1868	65.42
	do	do	1870 and 1872	19.64
	do	do	1872 and 1874	10.46
9956	W. W. Spratt, Leo, Ind	do	1866	4.47
9957	John Schoerpf, Leo, Ind	do	1866 and 1868	22.75
9958	J. D. Patrick, Leopold, Ind	do	do	50.96
	do	do	1870 and 1872	25.92
9959	Levi Keagle, Liberty Mills, Ind	do	1868	13.47
9960	Hiram M. Goodspeed, Ligonier, Ind	do	1868 and 1870	245.56
9961	Mrs. Lavilla Wicker, Lima, Ind	do	1866 and 1868	99.67
9962	Henry M. Kromer, Lima, Ind	do	1866 and 1867	19.11
9963	Z. M. Wheeler, Limberlost, Ind	do	1868 and 1870	8.79
	do	do	1870	3.89
9964	James Baker, Lincoln, Ind	do	1870 and 1872	32.70
	do	do	1872 and 1874	15.13

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9965	Andrew Anthony, Linden, Ind	Compensation of postmasters readjusted, etc.	1866 and 1868	$87.90
	do	do	1872 and 1873	11.32
9966	William Wines, Linton, Ind	do	1866 and 1867	47.28
9967	Oliver McKissick, Linton, Ind	do	1867 and 1868	111.41
	do	do	1868	27.39
9968	B. S. Sherwood, Linton, Ind	do	1868 and 1870	112.61
	do	do	1872	4.66
9969	John H. Baughman, Lisbon, Ind	do	1866 and 1867	13.19
9970	Thomas Cheek, Lisbon, Ind	do	1867 and 1868	45.71
9971	Chester Shive, Little River, Ind	do	1868	4.73
9972	Joel B. Motsinger, Little York, Ind	do	1866 and 1867	108.43
	do	do	1867 and 1868	65.05
9973	William M. Greenslade, Livonia, Ind	do	1866 and 1868	54.11
9974	Solomon Berlin, Locke, Ind	do	do	30.50
	do	do	1868 and 1869	2.83
9975	Charles Jolly, Logan, Ind	do	1866 and 1868	13.30
	do	do	1868 and 1870	[illegible].36
	do	do	1870	19.00
9976	Fernandes Sleeth, London, Ind	do	1866 and 1868	60.56
	do	do	1868 and 1870	23.28
9977	W. C. Hendricks, Lossantville, Ind	do	1866 and 1868	46.36
	do	do	1868 and 1869	3.41
9978	John J. Lasswell, Lovely Dale, Ind	do	do	2.45
9979	William Sigler, Lowell, Ind	do	1866	21.57
9980	Lewis J. Miller, Lynville, Ind	do	1866 and 1867	79.49
9981	James V. Lyons, Lyon's Station, Ind	do	1872 and 1874	9.48
9982	D. D. Gore, McCameron, Ind	do	1866 and 1868	35.64
	do	do	1872 and 1874	14.60
9983	Nelson Bradley, McCordsville, Ind	do	1868	4.29
	do	do	1866 and 1868	47.26
9984	James T. McCoy, McCoy, Ind	do	do	31.00
	do	do	1868 and 1870	5.88
	do	do	1872 and 1874	9.40
9985	George W. Vansickel, Mahalasville, Ind	do	1870 and 1872	24.40
9986	Volney Smith, Manhattan, Ind	do	1866 and 1868	49.00
	do	do	1868 and 1870	33.46
	do	do	1870 and 1871	12.45
9987	Robert Manville, Manville, Ind	do	1866 and 1868	102.44
	do	do	1870	6.21
9988	John McFebridge, Manville, Ind	do	1871 and 1872	15.52
9989	W. B. Edwards, Manilla, Ind	do	1866 and 1867	42.90
9990	Robert Craige, Manilla, Ind	do	1867 and 1868	59.50
	do	do	1870 and 1872	47.64
	do	do	1872 and 1874	25.80
9991	John W. Harvey, Mansfield, Ind	do	1866 and 1867	54.84
9992	John T. Marsh, Marco, Ind	do	1870 and 1872	30.98
9993	Robert B. Williams, Marcy, Ind	do	1868 and 1870	10.88
	do	do	1870 and 1871	8.98
9994	C. C. Taylor, Marengo, Ind	do	1872 and 1874	28.06
9995	B. F. Sturgis, Marietta, Ind	do	1866 and 1868	40.62
	do	do	1870 and 1872	18.10
9996	Wm. H. H. Smith, Markle, Ind	do	1866 and 1868	93.05
9997	S. F. Hardy, Markleville, Ind	do	1868 and 1870	5.40
	do	do	1870 and 1872	29.74
	do	do	1872 and 1874	19.80
9998	Jas. H. Hill, Marmont, Ind	do	1870 and 1872	5.28
9999	Ezra H. Martin, Martinsburgh, Ind	do	1866	8.81
10000	W. H. Rice, Martinsburgh, Ind	do	1866 and 1868	61.67
	do	do	1868 and 1870	12.64
10001	M. W. Coleman, Martinsville, Ind	do	1866 and 1868	295.60
10002	James Moody, Marts, Ind	do	do	108.14
10003	Hiram Darter, Mauckport, Ind	do	1866 and 1867	50.74
10004	Geo. S. Newman, Mauckport, Ind	do	1867 and 1868	44.25
10005	H. Atkinson, Maxinkuckee, Ind	do	1866 and 1868	15.86
	do	do	1870 and 1871	7.34
10006	Isaac Franklin, Mechanicsburgh, Ind	do	1866 and 1868	83.34
10007	David Wright, Medora, Ind	do	1866	15.15
10008	J. D. Coombs, Memphis, Ind	do	1866 and 1868	25.62
10009	Wm. H. McKee, Merom, Ind	do	1866 and 1867	64.33
10010	Thos. Stanley, Merom, Ind	do	1867 and 1868	83.37
10011	J. D. Bookover, Metea, Ind	do	1866	1.61
	do	do	1866 and 1868	12.09
10012	James M. Mason, Mexico, Ind	do	1866 and 1868	95.22
10013	Willard Griswold, Mexico, Ind	do	1870 and 1872	42.76
	do	do	1872	12.86
10014	W. F. Ravely, Merriam, Ind	do	1872 and 1874	20.98
10015	Archibald Hahn, Metamora, Ind	do	1866	23.61
10016	Lewis E. Hahn, Metamora, Ind	do	1867 and 1868	85.21

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10017	James Shepard, Metz, Ind	Compensation of postmasters readjusted, etc.	1866 and 1868	$119.76
10018	James W. Edwards, Miami, Ind	do	1866	14.28
10019	George Meyers, Midway, Ind	do	do	6.76
	do	do	1869 and 1870	6.73
10020	John Gwaltney, Midway, Ind	do	1866 and 1868	20.28
	do	do	1868 and 1869	3.88
10021	Clark S. Boggs, Middle Fork, Ind	do	1866	14.08
10022	Samuel S. Rodkey, Middle Fork, Ind	do	1866 and 1868	49.10
10023	W. W. Cotterel, Middletown, Ind	do	1866	16.53
10024	James T. Moore, Middletown, Ind	do	1867 and 1868	60.92
10025	A. E. Bundy, Middletown, Ind	do	1866 and 1867	37.03
10026	John Irvine, Mier, Ind	do	1867 and 1868	20.71
10027	Malachi Ott, Mifflin, Ind	do	1866 and 1868	11.44
	do	do	1868 and 1870	11.04
	do	do	1872 and 1874	6.16
10028	Wm. E. Jeffries, Milan, Ind	do	1866	10.41
10029	Lawrence Shultz, Milan, Ind	do	1866 and 1867	46.50
10030	James L. Stiles, Milan, Ind	do	1870 and 1871	12.06
10031	Henry D. Hoover, Millark, Ind	do	1866 and 1867	7.02
10032	J. G. Lockard, Milford, Ind	do	do	24.26
10033	Williston C. Brown, Milford, Ind	do	1867 and 1868	36.79
10034	Geo. A. Smith, Millport, Ind	do	1866 and 1868	22.38
	do	do	1868 and 1870	5.56
10035	Chas. E. McVey, Milltown, Ind	do	1866 and 1868	85.56
	do	do	1868 and 1870	15.60
	do	do	1870	2.74
10036	Charles A. C. Howren, Mitchell, Ind	do	1872 and 1874	16.08
10037	Anslem Wood, Mitchell, Ind	do	1867 and 1868	59.83
10038	Silas Moore, Mitchell, Ind	do	1872 and 1874	162.48
10039	Robert Wilson, Mixerville, Ind	do	1872 and 1874	16.63
10040	Moses Banker, Monitor, Ind	do	1866 and 1867	3.94
10041	G. W. Williams, Monitor, Ind	do	1867 and 1868	5.20
10042	L. N. Coverdale, Monmouth, Ind	do	1866 and 1868	52.32
	do	do	1870 and 1872	6.87
10043	Willis J. Imes, Monon, Ind	do	1866 and 1867	28.06
10044	J. L. Watson, Monon, Ind	do	1867 and 1868	70.40
10045	John T. Hubbard, Monrovia, Ind	do	1866 and 1867	40.29
10046	Jeremiah Hadley, Monrovia, Ind	do	1867	40.29
10047	James Richy, Monterey, Ind	do	1866	4.98
10048	William Kelsey, Monterey, Ind	do	1867 and 1868	19.87
	do	do	1866 and 1868	12.12
10049	John R. Rea, Montez, Ind	do	1870 and 1872	11.54
	do	do	1868	12.24
10050	Louis R. Young, Montezuma, Ind	do	1870 and 1872	56.90
	do	do	1872 and 1874	92.64
10051	Robert Spencer, Monticello, Ind	do	1866	21.16
10052	William J. Huff, Monticello, Ind	do	1872 and 1874	134.88
10053	Oscar Boone, Montpelier, Ind	do	1866 and 1868	192.00
10054	William Seaman, Mooney, Ind	do	1866	18.92
10055	Benjamin F. Scott, Mooney, Ind	do	1866 and 1867	37.84
10056	William L. Boyatt, Mooney, Ind	do	1867 and 1868	94.60
	do	do	1868 add 1869	8.46
10057	James L. Murphy, Mooney, Ind	do	1872	4.20
	do	do	1872 and 1874	42.66
10058	James Rolston, Moorefield, Ind	do	1866 and 1868	43.75
10059	Solomon Wint, Moore's Vineyard, Ind	do	do	6.78
	do	do	1872 and 1874	9.92
10060	John Campbell, Moral, Ind	do	1866 and 1868	16.16
	do	do	1865 and 1870	8.04
	do	do	1872 and 1874	9.42
10061	Reuben Griffitt, Morgantown, Ind	do	1866 and 1868	73.88
10062	J. M. Neeley, Morgantown, Ind	do	1872 and 1874	56.42
10063	John H. Worman, Morris, Ind	do	1868	5.07
	do	do	1870 and 1872	152.96
10064	Martin Frank, Morton, Ind	do	1866 and 1868	21.80
10065	Sanford McGinness, Moscow, Ind	do	1866 and 1867	33.95
10066	Paris Cooper, Mountain Springs, Ind	do	do	15.96
10067	Jacob Mahley, Mount Auburn, Ind	do	1872 and 1874	14.60
10068	J. S. La Rue, Mount Carmel, Ind	do	1866 and 1868	75.96
10069	Jason B. Smith, Mount Carmel, Ind	do	1868	3.26
	do	do	1868 and 1870	47.76
10070	E. M. McCready, Mount Carmel, Ind	do	1871 and 1872	38.68
	do	do	1872 and 1873	26.85
10071	George S. Plasterer, Mount Etna, Ind	do	1866 and 1867	81.39
10072	Lewis W. Van Antwerp, Mount Etna, Ind.	do	1868	27.13
	do	do	1870 and 1872	68.64

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10072	Lewis W. Van Antwerp, Mount Etna, Ind.	Compensation of postmasters readjusted, etc.	1872 and 1874	$0.50
10073	John Igel, jr., Mount Healthy, Ind	do	1866 and 1868	27.12
	do	do	1868 and 1870	9.58
	do	do	1870 and 1872	27.24
	do	do	1872 and 1874	12.02
10074	B. F. Thomas, Mount Hope, Ind	do	1866 and 1868	11.94
10075	John F. Bright, Mount Liberty, Ind	do	do	7.30
10076	J. S. Cooper, Mount Meridian, Ind	do	1866	3.32
10077	John H. McMickle, Mount Prospect, Ind	do	1866 and 1868	45.40
	do	do	1870 and 1872	6.86
	do	do	1872 and 1874	3.18
10078	Joseph Moore, Mount Vernon, Ind	do	1868	13.26
10079	Sylvanus Milner, Mount Vernon, Ind	do	1870	42.08
10080	John King, Mud Lick, Ind	do	1868 and 1870	1.37
	do	do	1872 and 1874	8.26
10081	J. W. Warman, Muddy Fork, Ind	do	1866 and 1868	11.55
	do	do	1868 and 1870	7.68
	do	do	1870	3.84
10082	Albert P. Warman, Muddy Fork, Ind	do	1871 and 1872	11.52
	do	do	1872 and 1874	4.04
10083	H. C. March, Muncie, Ind	do	1866 and 1868	296.48
10084	George Weber, Murray, Ind	do	1868 and 1869	9.84
10085	Joseph L. Myers, Murray, Ind	do	1869 and 1870	12.09
	do	do	1870 and 1872	25.62
	do	do	1872 and 1873	11.64
10086	William M. Browning, Nashville, Ind	do	1866 and 1867	93.35
10087	William S. Olmsted, Nashville, Ind	do	1867 and 1868	56.01
10088	Jachariah Underwood, Nebraska, Ind	do	do	50.40
10089	S. Elliott, Nebraska, Ind	do	1873 and 1874	13.35
10090	Joseph Hewitt, sr., Neff, Ind	do	1866 and 1868	41.10
10091	Stephen P. Lee, Nevada, Ind	do	1868 and 1869	5.73
10092	Jacob Gaffga, New Alsace, Ind	do	1866 and 1868	25.04
	do	do	1870 and 1872	11.04
10093	Wesley Watson, New Amsterdam, Ind	do	1866 and 1868	77.40
	do	do	1868 and 1870	6.88
10094	William B. Williams, New Bellsville, Ind	do	1866	5.02
10095	Rebecca Dunlap, Newbern, Ind	do	1866 and 1867	28.75
10096	T. F. McCallie, Newbern, Ind	do	1871 and 1872	31.04
10097	H. C. Owen, Newberry, Ind	do	1866 and 1867	33.90
	do	do	1874	14.54
10098	Thomas B. Phillips, New Boston, Ind	do	1866 and 1867	5.98
10099	John G. Kraus, New Boston, Ind	do	1867 and 1868	8.73
10100	Samuel Trittipo, New Britton, Ind	do	1866 and 1868	35.62
	do	do	1872 and 1874	10.68
10101	J. E. Bates, Newburgh, Ind	do	1866 and 1868	132.44
10102	Mary M. Root, Newburgh, Ind	do	1870 and 1872	77.78
10103	Thad. Coffin, New Castle, Ind	do	1871 and 1872	160.39
	do	do	1872 and 1874	512.60
10104	William M. Reed, New Corydon, Ind	do	1866 and 1868	120.32
10105	George W. Brady, New Corner, Ind	do	1867 and 1868	26.10
10106	David O. Munsy, New Corner, Ind	do	1871	6.35
10107	F. M. Shirley, New Elizabeth, Ind	do	1867 and 1868	22.03
10108	Joel Parker, New Garden, Ind	do	1866 and 1868	64.72
	do	do	1870 and 1872	38.74
10109	Emeline Scarce, New Garden, Ind	do	1872	5.75
10110	William L. Shuey, New Goshen, Ind	do	1866	8.27
10111	Jeremiah V. Pinson, New Goshen, Ind	do	1866 and 1868	57.89
10112	Meredith Y. Owen, New Goshen, Ind	do	1870 and 1872	11.38
10113	Julius C. Miller, New Harmony, Ind	do	1866	46.64
10114	Lamont M. Rogers, New Haven, Ind	do	do	23.77
10115	Milton Thompson, New Haven, Ind	do	1867 and 1868	67.20
10116	Richard M. Batty, New Holland, Ind	do	1866 and 1868	21.97
10117	Jonathan Copeland, New Holland, Ind	do	1870 and 1872	25.23
	do	do	1872 and 1874	26.90
10118	Reuben Harvey, New Lancaster, Ind	do	1866 and 1867	20.69
10119	George L. Shaw, New Lancaster, Ind	do	1867 and 1868	12.40
	do	do	1868 and 1870	12.73
10120	William T. Dodd, New Lebanon, Ind	do	1866 and 1868	60.32
10121	David C. Spraker, New London, Ind	do	1872 and 1874	33.26
10122	Elizabeth Westover, New Marion, Ind	do	1870 and 1972	11.42
	do	do	1867 and 1868	29.71
	do	do	1872 and 1874	7.64
10123	Jesse Kendall, New Mayaville, Ind	do	1866 and 1868	26.46
	do	do	1870 and 1872	19.46
	do	do	1872 and 1874	19.78
10124	Lirr James, New Mount Pleasant, Ind	do	1866 and 1867	35.55
10125	E. K. Epes, New Paris, Ind	do	1866	8.21
10126	Milton J. Bolan, New Paris, Ind	do	1866 and 1868	37.48

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10127	James F. Weller, Newport, Ind	Compensation of postmasters readjusted, etc.	1866 and 1867	$38.01
10128	T. S. Carter, New Providence, Ind	do	1866 and 1868	35.50
	do	do	1873 and 1874	9.87
10129	Daniel L. White, New Richmond, Ind	do	1866 and 1867	36.02
10130	John W. Plunkett, New Richmond, Ind	do	1870	2.08
	do	do	1870 and 1872	28.58
10131	James Dunbar, New Ross, Ind	do	1866 and 1867	6.65
10132	Jos. L. Cowing, New Salem, Ind	do	1866	15.30
10133	David M. George, New Salem, Ind	do	1867 and 1868	45.91
10134	Wesley Shoulders, Newton Stewart, Ind	do	1866 and 1868	64.50
10135	John T. Stout, Newton Stewart, Ind	do	1871 and 1872	3.32
	do	do	1872 and 1873	10.00
10136	Thos. J. Dugan, Newtonville, Ind	do	1870 and 1871	9.02
10137	Robert Campbell, Newtown, Ind	do	1866	34.50
	do	do	1870 and 1872	46.60
	do	do	1872 and 1874	37.36
10138	Randolph Harris, Newtown, Ind	do	1867 and 1868	37.10
10139	Samuel Davis, New Trenton, Ind	do	1870	.46
10140	Margaret J. Tilford, New Washington, Ind.	do	1866 and 1868	123.88
	do	do	1868 and 1870	47.68
	do	do	1870 and 1872	47.04
	do	do	1872 and 1874	47.06
10141	David Smith, Niconza, Ind	do	1870 and 1872	41.14
10142	A. J. Belk, Nineveh, Ind	do	1866 and 1868	71.38
10143	Leander Kennedy, Noah, Ind	do	do	22.36
	do	do	1870 and 1872	6.36
10144	Ira B. White, Noble C. H., Ind	do	do	51.38
10145	Levi Farley, Noblesville, Ind	do	1866 and 1868	287.68
10146	Aaron Cox, Noblesville, Ind	do	1868	59.41
10147	James B. Campbell, Normanda, Ind	do	1867 and 1868	32.17
	do	do	1868 and 1870	27.02
	do	do	1870 and 1872	41.46
10148	William C. Vance, Northfield, Ind	do	do	74.30
	do	do	1872 and 1873	6.40
10149	E. S. Hawley, North Hogan, Ind	do	1866 and 1868	24.01
10150	Milton Taylor, North Hogan, Ind	do	1868	1.03
	do	do	1868 and 1870	17.14
	do	do	1870 and 1872	24.66
	do	do	1872 and 1874	23.56
10151	Nathan H. North, North's Landing, Ind	do	1866 and 1868	27.14
	do	do	1868 and 1870	9.30
	do	do	1870 and 1872	9.74
	do	do	1872 and 1874	8.84
10152	Norman S. Miller, North Liberty, Ind	do	1866 and 1868	34.00
10153	William J. Elvin, North Madison, Ind	do	1866	20.59
10154	Joseph Roberts, North Madison, Ind	do	1867	2.28
10155	Hannah Smith, North Madison, Ind	do	1867 and 1868	59.47
10156	Aaron Smith, North Salem, Ind	do	1870 and 1872	36.74
10157	Hiram Priest, sr., Nottingham, Ind	do	1866 and 1868	69.50
	do	do	1868 and 1870	12.50
	do	do	1872 and 1874	81.94
10158	John Stableton, Numa, Ind	do	1866 and 1870	10.68
	do	do	1870 and 1871	10.21
10159	Samuel Crago, Null's Mills, Ind	do	1870 and 1872	6.92
	do	do	1872 and 1874	3.23
10160	Geo. R. McIlroy, Oakdale, Ind	do	1866 and 1868	4.84
	do	do	1868 and 1870	3.58
	do	do	1870	.97
10161	Samuel McIlroy, Oakdale, Ind	do	1871 and 1872	3.30
10162	Jacob C. Headley, Oak Farm, Ind	do	1866 and 1868	30.28
	do	do	1870 and 1872	5.00
10163	Thomas Coen, Oak Forest, Ind	do	1866 and 1868	23.96
10164	George W. Totten, Oakland, Ind	do	1866 and 1867	25.00
10165	William Jacobs, Oakland, Ind	do	1867 and 1868	17.79
	do	do	1870	2.95
10166	James M. Bunton, Oakland, Ind	do	1870 and 1872	10.90
	do	do	1872 and 1874	8.23
10167	William C. Coleman, Oakland City, Ind	do	1870 and 1872	36.26
10168	Adam Bond, Oaktown, Ind	do	1866 and 1868	174.52
10169	A. E. Pennington, Ogden, Ind	do	do	69.37
10170	Eli F. Hodson, Ogden, Ind	do	1868	8.60
	do	do	1870 and 1872	46.86
10171	Waldoman H. Winkler, Olean, Ind	do	1866 and 1868	27.16
10172	Gabriel Swihart, Oneida, Ind	do	do	13.38
	do	do	1870 and 1872	3.74
10173	Mary N. Farrand, Ontario, Ind	do	1866	16.31
10174	John Cortenborder, Onward, Ind	do	1866 and 1870	16.56

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10174	John Cortenborder, Onward, Ind	Compensation of postmasters readjusted, etc.	1870 and 1872	$38.68
	do	do	1872 and 1874	16.74
10175	Joseph George, Orange, Ind	do	1866 and 1868	39.84
	do	do	1872 and 1874	25.16
10176	John A. Ritter, Orangeville, Ind	do	1866 and 1868	113.06
10177	John W. Haymaker, Oregon, Ind	do	do	59.74
10178	David M. Turner, Oregon, Ind	do	1870 and 1872	14.24
	do	do	1872	.63
10179	William Roberts, Organ Springs, Ind	do	1866 and 1868	19.44
	do	do	1868 and 1870	2.98
	do	do	1870 and 1872	8.44
	do	do	1872 and 1874	5.66
10180	Casper J. Faulke, Orion, Ind	do	1870 and 1872	5.92
	do	do	1872 and 1874	3.66
10181	C. Schneider, Orland, Ind	do	1866 and 1868	141.20
10182	William C. R. Kemp, Orleans, Ind	do	1866	9.98
10183	Oliver T. Johnson, Oswego, Ind	do	1866 and 1867	5.67
10184	Edward Covert, Otisco, Ind	do	1872 and 1874	14.02
10185	Nathaniel T. Chappell, Otwell, Ind	do	1870 and 1872	35.30
10186	George W. Hodson, Ovid, Ind	do	1866 and 1868	10.69
10187	Samuel H. Kirkpatrick, Owensville, Ind	do	1866 and 1867	106.50
10188	Jacob Tucker, Padoria, Ind	do	1866 and 1868	51.74
	do	do	1870 and 1872	.80
10189	Greenville P. Cherry, Palestine, Ind	do	1866 and 1868	43.38
	do	do	1868 and 1870	24.18
10190	J. F. Hancock, Palmyra, Ind	do	1866 and 1868	64.92
10191	Henry T. Moxley, Paoli, Ind	do	do	240.96
10192	Abel Sutton, Parkerville, Ind	do	1869 and 1870	2.46
	do	do	1870 and 1872	10.04
10193	Charles Dotson, Parker, Ind	do	1866 and 1868	76.22
10194	Edwin Reese, Parker, Ind	do	1868 and 1870	14.88
10195	John W. Straughan, Parkersburgh, Ind	do	1866 and 1867	23.29
10196	Charles S. James, Parkersburgh, Ind	do	1868	7.76
10197	James H. Watts, Patricksburgh, Ind	do	1866	10.46
10198	Lorenzo D. Coats, Patricksburgh, Ind	do	1866 and 1868	73.23
10199	Elbert F. Harrold, Patricksburgh, Ind	do	1870 and 1872	28.54
	do	do	1872 and 1874	26.36
10200	John W. Shirey, Patriot, Ind	do	1868 and 1869	43.72
10201	D. L. Repp, Paw Paw, Ind	do	1866 and 1868	20.59
10202	Thomas S. Marshall, Peoksburgh, Ind	do	do	13.48
	do	do	1870 and 1872	6.38
10203	Alfred B. Collins, Pekin, Ind	do	1866 and 1868	64.84
	do	do	1868 and 1870	15.44
	do	do	1870 and 1871	32.57
10204	John P. Kyte, Pekin, Ind	do	1871 and 1872	46.52
10205	August Pepper, Peppertown, Ind	do	1866 and 1868	40.90
10206	Washington Dunton, Perry, Ind	do	1867 and 1868	27.99
	do	do	1868 and 1870	19.12
10207	William Friend, Perrysburgh, Ind	do	1866 and 1867	23.81
10208	Smith Rabb, Perryville, Ind	do	1866 and 1868	154.30
10209	Darian Hewins, Petersburgh, Ind	do	1866	34.97
10210	John K. Patterson, Petersburgh, Ind	do	1866 and 1868	209.83
10211	Mary M. Glezen, Petersburgh, Ind	do	1873 and 1874	42.72
10212	Oscar F. Meek, Philadelphia, Ind	do	1866 and 1868	100.20
10213	T. P. Holmes, Pickard's Mills, Ind	do	1868 and 1870	8.30
10214	James B. Snider, Pickard's Mills, Ind	do	1870 and 1872	42.98
10215	Thomas E. Swain, Pike's Peak, Ind	do	1872 and 1874	6.54
10216	Aaron I. Putnam, Pilot Grove, Ind	do	1866	.40
10217	William A. Crisler, Pilot Grove, Ind	do	1867 and 1868	5.86
10218	James B. Rowen, Pine Village, Ind	do	1866 and 1868	98.52
10219	John N. Shirley, Pittsborough, Ind	do	1866	6.43
10220	E. W. King, Pittsborough, Ind	do	do	33.90
10221	William Davidson, Pittsburgh, Ind	do	1866 and 1867	142.20
10222	Walter Scott, Pleasant, Ind	do	do	29.47
10223	W. S. Francis, Pleasant, Ind	do	1871 and 1872	8.44
	do	do	1872 and 1874	43.56
10224	W. K. Parkison, Pleasant Grove, Ind	do	1866 and 1868	8.68
	do	do	1870 and 1872	10.40
	do	do	1872 and 1874	7.54
10225	Conrad Hartness, Pleasant Hill, Ind	do	1866 and 1867	27.38
10226	David Gilbert, Pleasant Lake, Ind	do	do	35.98
10227	Volney E. Sommons, Pleasant Lake, Ind	do	1867 and 1868	58.22
	do	do	1872 and 1874	1.84
10228	Amos F. Dailey, Pleasant Mills, Ind	do	1866 and 1868	34.68
	do	do	1872 and 1874	13.80
10229	H. T. True, Poe, Ind	do	1870 and 1872	40.24
	do	do	1872 and 1874	5.92
10230	Valentine F. Planck, Point Isabel, Ind	do	1866 and 1868	21.46

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10231	John B. Nees, Poland, Ind	Compensation of postmasters readjusted, etc.	1866 and 1868	$44.92
	do	do	1868 and 1869	10.57
10232	Christopher H. Kattman, Poland, Ind	do	1870	2.80
	do	do	1870 and 1872	15.78
	do	do	1872 and 1873	35.81
10233	John R. Foreman, Poland, Ind	do	1873 and 1874	22.77
10234	William M. Jones, Polk Patch, Ind	do	1872 and 1873	9.90
10235	Michael Beckner, Poplar Grove, Ind	do	1870 and 1872	18.46
	do	do	1872 and 1874	13.02
10236	Ezekiel Franklin, Poolsville, Ind	do	1866 and 1867	26.83
10237	Henry Foster, Poolsville, Ind	do	1868 and 1870	25.44
	do	do	1870 and 1871	6.67
10238	James T. Scott, Portland Mills, Ind	do	1870 and 1872	46.92
	do	do	1872 and 1874	29.46
10239	Archelaus E. Whitten, Porter Station, Ind.	do	1870 and 1872	32.86
	do	do	1872 and 1873	7.31
10240	Frederick Michael, Porter Station, Ind	do	1873 and 1874	29.83
10241	Daniel Harris, Portersville, Ind	do	1866	5.42
10242	William Krodle, Portersville, Ind	do	1870 and 1872	5.31
10243	John K. Weaver, Poseyville, Ind	do	1866 and 1868	124.28
10244	T. M. Weaver, Poseyville, Ind	do	1870 and 1872	25.04
	do	do	1872 and 1874	32.34
10245	Darius Orr, Powers, Ind	do	1870 and 1871	15.36
10246	Thomas C. Loyd, Prairie Creek, Ind	do	1866 and 1867	33.88
10247	William C. Shattuck, Prairie Creek, Ind	do	1870	2.56
	do	do	1872	6.67
10248	George W. Dickinson, Prairieton, Ind	do	1866 and 1868	28.55
10249	Louis W. Pahmeyer, Prairieton, Ind	do	1867	17.13
10250	Henry C. Davisson, Priam, Ind	do	1866 and 1868	42.76
	do	do	1868 and 1870	9.14
10251	James M. Anderson, Priam, Ind	do	1866	9.42
10252	L. H. Karns, Priam, Ind	do	1872 and 1874	12.26
10253	C. A. Slayback, Princeton, Ind	do	1866	61.71
10254	Mrs. Drusilla Dorsey, Princeton, Ind	do	1867 and 1868	249.07
10255	Mathew McInerny, Prince William, Ind	do	1866 and 1868	38.98
	do	do	1870 and 1872	16.13
10256	Jno. H. Gillespie, Pulaski, Ind	do	1866 and 1867	37.75
10257	A. J. Clark, Putnamville, Ind	do	1866	14.72
10258	Sylvester C. Bishop, Putnamville, Ind	do	1866 and 1868	103.07
10259	J. M. Stanton, Quakertown, Ind	do	1868 and 1870	21.34
	do	do	1872 and 1874	8.24
10260	Aaron Doll, Queensville, Ind	do	1866	24.90
10261	Edwin L. Parker, Queensville, Ind	do	1867 and 1868	74.71
	do	do	1868 and 1870	49.56
10262	William Lampton, Quercus Grove, Ind	do	1866 and 1868	38.50
10263	J. R. Spratt, Quincy, Ind	do	1868	37.63
	do	do	do	18.95
10264	Alfred Ragle, Raglesville, Ind	do	1866 and 1868	24.48
10265	Henry Jacobs, Rainsville, Ind	do	do	78.50
10266	Lott C. Ammon, Raleigh, Ind	do	1866 and 1867	6.31
10267	Michael McSurnan, Raleigh, Ind	do	1867 and 1868	10.49
	do	do	1868 and 1870	11.22
	do	do	1870 and 1871	4.76
10268	R. M. La Rue, Raleigh, Ind	do	1871 and 1872	7.13
10269	William D. Fall, Reese's Mills, Ind	do	1866 and 1868	98.70
10270	James S. Little, Rei, Ind	do	1866 and 1867	32.16
10271	Elias D. Mullan, Rei, Ind	do	1867 and 1868	53.60
10272	J. W. Hamilton, Rei, Ind	do	1872 and 1874	44.84
10273	Nicholas Louis, Reiffsburgh, Ind	do	1866 and 1867	17.55
10274	John P. Dunlap, Rensselear, Ind	do	do	65.03
10275	George B. Cornwell, Rensselear, Ind	do	1866 and 1868	277.12
10276	Rial Benjamin, Rensselear, Ind	do	1872 and 1873	52.21
10277	G. I. Litzenberger, Reserve, Ind	do	1866 and 1868	55.90
10278	John Gasaway, Retreat, Ind	do	do	33.78
10279	Jas. C. Williams, Richardson, Ind	do	do	53.12
	do	do	1868 and 1870	16.56
	do	do	1870 and 1872	12.50
	do	do	1872 and 1873	8.23
10280	James Jackson, Rich Valley, Ind	do	1866 and 1868	8.82
	do	do	1868 and 1870	15.04
10281	George W. McLain, Richwoods, Ind	do	1866 and 1868	55.46
	do	do	1870 and 1872	3.06
	do	do	1872 and 1874	7.00
10282	Elisha T. Bailey, Ridgeville, Ind	do	1870 and 1872	117.02
10283	Hugh Hamilton, Rigdon, Ind	do	1866 and 1868	10.98
10284	William W. Haines, Rising Sun, Ind	do	1866 and 1867	132.09
10285	Joseph B. Pepper, Rising Sun, Ind	do	1867 and 1868	249.89

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10285	Joseph B. Pepper, Rising Sun, Ind	Compensation of postmasters readjusted, etc.	1868	$10.38
10286	Mrs. Eliza M. Spencer, Rising Sun, Ind	do	1869 and 1870	179.72
10287	Chester Chamberlain, Rochester, Ind	do	1866 and 1867	57.98
10288	Joshua Hunteinger, Rockfield, Ind	do	1868	12.12
10289	Ports Wilson, Rockfield, Ind	do	1869	18.18
10290	Aaron Gregg, Rockfield, Ind	do	1870	6.06
10291	Leeman S. Gilkey, Rockfield, Ind	do	1866	10.63
10292	Hunter C. Mears, Rockport, Ind	do	1866 and 1868	241.85
10293	Jabish Luellen, Rockport, Ind	do	do	17.78
	Jabish Luellen, Rodgersville, Ind	do	1868 and 1870	5.46
	do	do	1870 and 1872	9.86
	do	do	1872 and 1874	14.74
10294	Joseph A. Bullard, Rono, Ind	do	1866 and 1868	28.74
	do	do	1868 and 1870	6.94
	do	do	1870 and 1872	29.56
10295	S. L. Gorsline, Root, Ind	do	1868 and 1869	18.42
10296	Franklin D. Bell, Rosedale, Ind	do	1866 and 1868	49.80
10297	E. L. Wheat, Roseville, Ind	do	do	42.96
	do	do	1870 and 1872	17.40
	do	do	1872 and 1874	11.14
10298	L. D. Holmes, Ross, Ind	do	1866 and 1868	53.42
10299	James Sheffer, Rossville, Ind	do	do	150.26
	do	do	1870 and 1872	45.46
	do	do	1872 and 1874	53.26
10300	William B. Montfort, Royal Centre, Ind	do	1866	13.10
10301	Joseph G. Barron, Royal Centre, Ind	do	1866 and 1868	91.71
10302	S. Strawmyer, Royalton, Ind	do	1872 and 1874	12.48
10303	James L. Wilson, Russellville, Ind	do	1866 and 1867	36.25
10304	J. H. Orear, Russellville, Ind	do	1867	26.14
10305	Joseph T. Hopkins, Russellville, Ind	do	1867 and 1868	34.28
	do	do	1870 and 1872	45.84
	do	do	1872 and 1874	35.14
10306	John Dixon, Rushville, Ind	do	1866 and 1868	241.96
10307	Sarah Hackleman, Rushville, Ind	do	1868	34.56
	do	do	1868 and 1870	266.72
10308	Thomas L. Shilling, Russiaville, Ind	do	1866 and 1868	99.02
	do	do	1868 and 1869	11.70
10309	William H. Bishop, Russiaville, Ind	do	1869 and 1870	7.02
	do	do	1870 and 1872	35.00
	do	do	1872 and 1874	41.36
10310	Leander A. Bullington, Saint Bernice, Ind.	do	1869 and 1870	5.42
	do	do	1870 and 1872	23.44
	do	do	1872 and 1873	9.12
10311	Francis P. Kellmann, Saint John, Ind	do	1866 and 1868	16.66
10312	Joseph Bulach, Saint Leon, Ind	do	do	12.32
	do	do	1868 and 1870	12.08
	do	do	1870 and 1872	14.22
	do	do	1872 and 1874	29.06
10313	Paris Julian, Saint Omer, Ind	do	1866 and 1868	44.22
10314	James Trimble, Saint Paul, Ind	do	do	76.90
10315	Michael Geis, Saint Peter's, Ind	do	1866 and 1867	8.12
10316	John Schuck, Saint Peter's, Ind	do	1871 and 1872	7.85
	do	do	1872 and 1874	6.30
10317	George Maas, Saint Wendell, Ind	do	1866 and 1868	8.84
	do	do	1870 and 1872	10.36
	do	do	1872 and 1874	21.38
10318	A. J. Brake, Salamonia, Ind	do	1866 and 1868	85.50
	do	do	1870 and 1872	12.56
	do	do	1872 and 1874	15.30
10319	John L. Menaugh, Salem, Ind	do	1867 and 1868	190.13
10320	James B. Hicks, Salem, Ind	do	1872 and 1874	136.12
10321	Orson Woodford, Salem Centre, Ind	do	1866 and 1868	73.12
10322	John Cary, Salem Centre, Ind	do	1870 and 1872	38.68
10323	Felix D. Badger, Saltilloville, Ind	do	1866 and 1868	180.34
10324	James E. Benham, Saluda, Ind	do	1868 and 1870	15.22
	do	do	1872 and 1873	3.87
	do	do	1870 and 1872	15.44
10325	Lewis S. Calder, Sandford, Ind	do	1867 and 1868	28.39
10326	Duane D. Stillwell, Sandford, Ind	do	1870 and 1872	56.20
	do	do	1872 and 1874	41.30
10327	Benjamin W. Hughes, San Jacinto, Ind.	do	1870 and 1872	17.54
	do	do	1872 and 1873	10.18
10328	B. F. Wilderman, San Jacinto, Ind	do	1874	.76
10329	Bradford Glazebrook, San Pierre, Ind	do	1866 and 1867	29.72
10330	B. A. Daggy, San Pierre, Ind	do	1867	44.58
10331	M. Griffin, San Pierre, Ind	do	1868	29.73
10332	Joseph Mulvain, San Pierre, Ind	do	1870 and 1872	92.84

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10333	Charles Surmann, Santa Claus, Ind	Compensation of postmasters readjusted, etc.	1866 and 1868	$44.58
10334	Theodore Hanning, Santa Claus, Ind	do	1871 and 1872	11.56
	do	do	1872 and 1874	36.78
10335	William Tate, Santa Fé, Ind	do	1866 and 1868	76.52
10336	T. Keys, Santa Fé, Ind	do	1870 and 1872	7.42
10337	Gideon E. Moncrief, Sardinia, Ind	do	1866 and 1867	40.81
10338	J. H. McMillen, Sardinia, Ind	do	1867 and 1868	68.03
10339	Eli Hatfield, Saturn, Ind	do	1866 and 1867	5.57
10340	James Broxon, Saturn, Ind	do	1868	1.93
	do	do	1872 and 1874	2.66
10341	Thomas Wilkerson, Scipio, Ind	do	1866 and 1868	72.72
10342	William B. Grubb, Scott, Ind	do	1870	3.89
10343	William Drebes, Scott, Ind	do	1871 and 1872	11.65
	do	do	1872 and 1874	27.08
10344	Wesley G. Scott, Scottsville, Ind	do	1868 and 1870	2.72
10345	W. W. Harrod, Sellersburgh, Ind	do	1867 and 1868	49.31
10346	Martin S. Ribble, Selma, Ind	do	1866 and 1868	162.36
10347	A. M. Towl, Sevastopol, Ind	do	do	15.64
	do	do	1872 and 1874	12.10
10348	Ellis Grubbs, Shanghai, Ind	do	1866 and 1868	13.66
	do	do	1868 and 1870	4.40
	do	do	1870 and 1872	8.96
	do	do	1872 and 1874	9.50
10349	A. B. Crawford, Shannondale, Ind	do	1866	1.24
10350	T. A. Atkins, Shannondale, Ind	do	1870 and 1872	58.06
	do	do	1872 and 1874	7.24
10351	Cyrus Bergdoll, Sharon, Ind	do	1867	2.07
10352	W. A. Robinson, Sharpsville, Ind	do	1866 and 1868	208.60
	do	do	1870 and 1872	39.72
	do	do	1872 and 1874	34.64
10353	J. H. Foxworthy, Sheasville, Ind	do	1866 and 1870	7.36
	do	do	1870 and 1872	14.42
10354	Wilson Siner, Shelburn, Ind	do	1866 and 1867	20.84
10355	Reed Hixon, Shelburn, Ind	do	1867 and 1868	32.75
10356	John S. Campbell, Shelbyville, Ind	do	1866 and 1867	115.67
10357	Asher G. Walton, Shielville, Ind	do	1866 and 1868	133.60
	do	do	1872 and 1874	54.70
10358	Otho Hoffman, Shoals, Ind	do	1868 and 1870	134.96
10359	Nelson Sinclair, Silver Creek, Ind	do	1866 and 1868	25.88
	do	do	1868 and 1869	1.94
10360	James Hall, Silver Lake, Ind	do	1866 and 1868	82.86
10361	William R. Leisure, Slash, Ind	do	do	17.82
	do	do	1868 and 1870	8.98
	do	do	1870 and 1872	23.84
10362	Nathan Johnson, Slash, Ind	do	1873 and 1874	7.80
10363	Sidney Butler, Slate, Ind	do	1866 and 1868	19.18
	do	do	1868 and 1869	1.10
10364	Fielding Lett, Slate, Ind	do	1869 and 1871	2.21
	do	do	1872 and 1874	10.00
10365	L. H. Andrews, Sligo, Ind	do	1866 and 1868	10.12
10366	Walter C. Scott, Smithland, Ind	do	1868	1.32
	do	do	1870 and 1872	23.00
10367	John S. Moore, Smithland	do	1866 and 1868	18.31
10368	William J. Taylor, Smithville, Ind	do	1866 and 1867	52.09
10369	Elijah S. Elder, Smyrna, Ind	do	do	6.27
10370	A. J. Axtell, Solsberry, Ind	do	1866 and 1868	131.29
10371	H. D. Lawshe, Somerset, Ind	do	do	98.40
10372	William Lehmer, Somerset, Ind	do	1870 and 1872	23.64
10373	John B. Corwin, Somerville, Ind	do	1866 and 1868	31.03
10374	Samuel G. Barrett, Somerville, Ind	do	1871 and 1872	11.39
	do	do	1872 and 1874	17.78
10375	Joseph Kinkade, South Bethany, Ind	do	1866 and 1867	23.99
10376	Jesse Hissem, South Cleveland, Ind	do	1866 and 1868	7.10
10377	Frederick Slater, Sparta, Ind	do	1870 and 1872	13.72
	do	do	1872 and 1874	12.02
10378	Adolphus Barnes, Spartansburgh, Ind	do	1866 and 1868	74.58
	do	do	1870 and 1872	16.20
	do	do	1872 and 1874	34.70
10379	William Crabb, Spearsville, Ind	do	1867 and 1868	13.07
	do	do	1868 and 1870	10.64
	do	do	1870 and 1872	4.42
	do	do	1872 and 1874	6.10
10380	James P. Antrim, Spiceland, Ind	do	1866 and 1868	44.30
	do	do	1868 and 1869	15.33
10381	G. W. Adams, Springfield, Ind	do	1866 and 1868	18.56
10382	Wm. Anderson, Spring Hill, Ind	do	1866 and 1867	10.83
10383	Hugh Brison, Spring Hill, Ind	do	1867 and 1868	18.07
	do	do	1870 and 1872	22.30

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10383	Hugh Brison, Spring Hill, Ind	Compensation of postmasters readjusted, etc.	1872 and 1874	$7.04
10384	Milton Short, Springville, Ind	do	1866 and 1867	74.59
10385	John J. Fleener, Spurgeon, Ind	do	1870 and 1872	24.46
	do	do	1872 and 1874	25.38
10386	Wm. Baker, Stanford, Ind	do	1866 and 1868	50.14
	do	do	1872 and 1874	20.24
10387	George Y. Stipp, State Line, Ind	do	1866 and 1867	16.22
10388	Davis Fraser, State Line, Ind	do	1866	12.90
10389	Wm. H. Lucas, Steam Corner, Ind	do	1871 and 1872	15.03
	do	do	1872 and 1874	15.66
10390	J. W. Robb, Stewartsville, Ind	do	1866 and 1868	92.00
	do	do	1872 and 1874	17.18
10391	David Boswell, Stilesville, Ind	do	1866 and 1868	134.90
10392	M. S. Haines, Stockdale, Ind	do	do	33.08
10393	Wm. Fleming, Storms Creek, Ind	do	do	29.72
	do	do	1868 and 1870	24.16
10394	Elwood Vickery, Straughn's Station, Ind	do	1872 and 1874	15.44
10395	Enoch Lamb, Strawtown, Ind	do	1871 and 1872	26.61
10396	S. R. Heath, Sugar Branch, Ind	do	1867 and 1868	2.43
	do	do	1868 and 1870	27.32
	do	do	1872 and 1874	20.64
10397	Chas. R. Clark, Sugar Branch, Ind	do	1866 and 1867	4.06
10398	Jasper N. Amett, Sugar Grove, Ind	do	1866 and 1868	31.70
10399	E. H. Johnson, Sulphur Hill, Ind	do	do	35.48
	do	do	1868 and 1870	38.26
10400	Wilson Y. Conger, Sulphur Hill, Ind	do	1872 and 1874	42.44
10401	J. L. McCorkle, Sulphur Springs, Ind	do	1872 and 1873	39.51
10402	Aquilla Moore, Summitville, Ind	do	1870 and 1872	70.34
10403	Alfred Swain, Sumner, Ind	do	1866 and 1868	14.15
10404	Amasa Hazen, Sunman, Ind	do	1866	13.18
10405	Ephraim Cramer, Swan, Ind	do	1868 and 1870	27.90
	do	do	1872 and 1874	53.44
10406	Chas. F. Bruce, Swan, Ind	do	1867	8.82
10407	Wm. Corrie, Swanville, Ind	do	1866	5.13
10408	Alex C. Monroe, Swanville, Ind	do	1866 and 1868	20.16
10409	Samuel C. Madden, Sylvania, Ind	do	1866 and 1867	13.46
10410	John M. Russell, Sylvania, Ind	do	1868 and 1870	22.97
	do	do	1868	4.50
10411	Henry Durham, Sylvania, Ind	do	1870	3.28
	do	do	1870 and 1872	40.86
	do	do	1872 and 1873	22.73
10412	Sharron Hall, Syracuse, Ind	do	1866 and 1867	51.94
10413	John C. Eaheart, Tassinong, Ind	do	1866 and 1868	22.23
	do	do	1868 and 1869	1.32
10414	Sylvester Pierce, Tassinong, Ind	do	1869 and 1870	2.01
	do	do	1870 and 1872	11.22
	do	do	1872 and 1874	19.70
10415	E. G. Hallowell, Taylorsville, Ind	do	1870 and 1872	93.90
	do	do	1872 and 1874	122.34
10416	Geo. R. Hotchkiss, Terre Coupee, Ind	do	1866 and 1867	19.50
10417	James McCollum, Terre Coupee, Ind	do	1867 and 1868	32.51
10418	Nathan T. Faurote, Terre Coupee, Ind	do	1871 and 1872	38.16
	do	do	1872 and 1874	20.72
10419	E. W. Crane, Tetersburgh, Ind	do	1866 and 1868	33.22
	do	do	1868	1.41
10420	Eber W. Phares, Tetersburgh, Ind	do	1868 and 1870	9.90
10421	N. B. Alleman, Tippecanoetown, Ind	do	1866 and 1867	8.52
10422	Clarissa J. Rino, Titusville, Ind	do	1866 and 1868	17.04
	do	do	1868 and 1870	3.04
10423	Decatur Downing, Toronto, Ind	do	1866 and 1868	104.38
	do	do	1870	4.25
10424	Jesse L. Peer, Toronto, Ind	do	1871 and 1872	17.01
	do	do	1872 and 1874	17.65
10425	James Kirlin, Trader's Point, Ind	do	1871 and 1872	11.65
10426	Ezekiel W. Morgan, Trafalga, Ind	do	1866 and 1868	28.10
10427	Ira J. Carter, Trash, Ind	do	1868	8.17
	do	do	1870 and 1872	12.74
	do	do	1872 and 1874	8.58
10428	Mary Ann Paschall, Trenton, Ind	do	1866 and 1868	72.04
	do	do	1872 and 1874	6.32
10429	Samuel F. Leonard, Trinity Springs, Ind	do	1866 and 1868	66.34
10430	Almon Tinklepaugh, Turkey Creek, Ind	do	do	33.04
10431	James Noddings, Turkey Creek, Ind	do	1871 and 1872	15.25
10432	A. Guthrie, Tunnelton, Ind	do	1866 and 1868	80.84
	do	do	1868 and 1870	21.96
	do	do	1872 and 1874	28.34
10433	Leonard Beck, Turman's Creek, Ind	do	1866 and 1868	53.30
	do	do	1868 and 1870	18.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10434	Benjamin L. Tribble, Turner, Ind	Compensation of postmasters readjusted, etc.	1872	$0.92
10435	John S. Walter, Twelve Mile, Ind	do	1866 and 1868	13.02
10436	J. L. Clause, Twelve Mile, Ind	do	1872 and 1874	18.08
10437	John Kime, Union, Ind	do	1867 and 1868	28.83
10438	Henry Fisher, Urneyville, Ind	do	1872 and 1874	11.40
10439	Frank A. Freeman, Union Mills, Ind	do	1866 and 1868	66.60
	do	do	1868 and 1870	17.52
	do	do	1870 and 1872	99.35
	do	do	1872 and 1874	16.83
10440	David Lyon, Upland, Ind	do	do	14.66
10441	Mathias Zeller, Urbana, Ind	do	1866 and 1867	7.77
10442	Charles P. Miller, Urbana, Ind	do	1867 and 1868	12.95
	do	do	1868 and 1870	6.04
	do	do	1870 and 1872	15.50
10443	M. H. Tyler, Utica, Ind	do	1866	4.90
10444	Mitchell P. Howes, Utica, Ind	do	1866 and 1868	53.36
10445	John Maxedon, Valcene, Ind	do	do	61.70
10446	Galt W. Booth, Valley City, Ind	do	1866 and 1867	12.03
10447	Charles R. Felts, Valley City, Ind	do	1867 and 1868	20.06
	do	do	1868 and 1870	4.48
	do	do	1870 and 1872	4.80
	do	do	1872 and 1874	38.18
10448	Abner Mills, Valley Mills, Ind	do	1866 and 1868	17.92
	do	do	1870 and 1872	13.86
10449	Oliver Scott, Vandalia, Ind	do	1866 and 1868	109.22
10450	James A. McClelland, Vernon, Ind	do	do	158.38
10451	James Harwood, Vevay, Ind	do	1866	47.08
10452	George C. Patton, Vevay, Ind	do	1866 and 1868	245.01
10453	Isaac Haughland, Vienna, Ind	do	do	86.66
10454	Nicholas Joest, Wadesville, Ind	do	do	62.42
	do	do	1870 and 1872	30.04
10455	C. W. Nusbaum, Wakarusa, Ind	do	1866	32.21
10456	Andrew Wise, Wakarusa, Ind	do	1867 and 1868	96.63
10457	Charles W. N. Stephens, Walkerton, Ind.	do	1866 and 1868	61.82
	do	do	1872 and 1874	70.86
10458	W. H. Spinney, Wallace, Ind	do	1873 and 1874	3.43
10459	Thomas R. Noel, Walpool, Ind	do	1866 and 1868	192.98
	do	do	1870 and 1872	70.72
10460	W. P. Beall, Walton, Ind	do	1872 and 1874	47.28
10461	Charles Spaeth, Wanatah, Ind	do	1866 and 1867	19.68
10462	Jonathan Irvin, Warren, Ind	do	1870 and 1872	47.94
10463	Robert Sprowl, Warren, Ind	do	1867 and 1868	100.55
10464	William Trees, Warrington, Ind	do	1866	2.50
10465	A. C. Thorp, Warrington, Ind	do	1867 and 1868	6.85
	do	do	1870 and 1872	27.76
	do	do	1872 and 1874	28.90
10466	Andrew G. Wood, Warsaw, Ind	do	1866 and 1867	64.07
10467	John N. Runyan, Warsaw, Ind	do	1867 and 1868	199.51
10468	Andrew Clark, Washington Centre, Ind.	do	1868	2.19
	do	do	1868 and 1870	9.30
	do	do	1870 and 1872	8.48
	do	do	1872 and 1874	1.68
10469	W. D. Prather, Waterford Mills, Ind	do	1868 and 1869	37.51
10470	David J. Miller, Waterman, Ind	do	1866 and 1868	3.50
	do	do	1868 and 1870	4.66
	do	do	1870 and 1872	30.12
	do	do	1872 and 1874	41.69
10471	Alexander Rowan, Wauhoa, Ind	do	1866 and 1867	11.50
10472	Philip Strauss, Waupécong, Ind	do	1868 and 1870	26.74
10473	E. M. Milligan, Waveland, Ind	do	1866 and 1868	159.24
10474	do	do	1870 and 1871	53.12
10475	John Graves, Waverly, Ind	do	1870 and 1872	45.86
	do	do	1872 and 1874	12.08
10476	Henry F. George, Waymansville, Ind	do	do	5.89
10477	Joseph Rothschild, Waynesburgh, Ind	do	1866 and 1868	38.34
	do	do	1868	1.98
10478	Samuel Shirk, Waynesburgh, Ind	do	1868 and 1870	20.30
	do	do	1872 and 1873	7.03
10479	William Holden, Wayneton, Ind	do	1866 and 1867	28.33
10480	Simon H. Bond, Webster, Ind	do	1867 and 1868	4.78
	do	do	1868 and 1870	3.42
	do	do	1870 and 1872	9.18
	do	do	1872 and 1874	10.24
10481	Francis Lang, Weisburgh, Ind	do	1866 and 1868	22.72
10482	William F. Osborn, West Baden, Ind	do	1872	3.69
10483	Isaac A. Griffith, West Chester, Ind	do	1870	1.91
	do	do	1870 and 1872	14.82

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10484	Joel Denny, Westfield, Ind.	Compensation of postmasters readjusted, etc.	1866	$51.34
10485	Evelyn Conklin, Westfield, Ind	do	1867 and 1868	136.90
10486	Silas Blount, West Kinderhook, Ind	do	1866 and 1868	11.20
10487	John R. Gray, Wesley, Ind	do	do	10.48
	do	do	1870 and 1871	2.61
10488	Elisha Pierce, Wesley, Ind.	do	1871 and 1872	6.27
10489	Joseph Atkins, West Point, Ind	do	1866	22.88
10490	Jesse Rider, West Point, Ind	do	1866 and 1868	86.04
10491	H. Mc. Doyle, Westport, Ind	do	1868 and 1869	10.27
10492	W. T. Scott, Westport, Ind	do	1868 and 1870	14.54
	do	do	1872 and 1873	8.21
10493	Arthur Allen, Westville, Ind	do	1867	59.40
10494	Milton C. Barnard, Westville, Ind	do	1868	47.33
10495	Sanford L. Niblack, Wheatland, Ind	do	1866	7.67
10496	Moses T. B. Sefrit, Wheatland, Ind	do	1867 and 1868	23.01
10497	Augustus Kemper, Wheatonville, Ind	do	1866 and 1868	15.82
	do	do	1865 and 1870	8.70
	do	do	1870	.38
10498	Reuben Patrick, Wheeling, Ind	do	1867 and 1868	53.48
	do	do	1868 and 1870	34.12
10499	G. W. Thomas, Wheeling, Ind	do	1866	26.74
10500	A. L. Kerwood, Wheeling, Ind	do	1871 and 1872	27.52
10501	George Siglèr, Wheeler, Ind	do	1866 and 1868	81.42
10502	David Stout, Whitcomb, Ind	do	do	18.54
	do	do	1868 and 1870	6.64
	do	do	1870 and 1872	17.54
	do	do	1872 and 1873	11.05
10503	Orlando E. Foster, White Hall, Ind	do	1870 and 1872	23.70
	do	do	1872 and 1874	24.32
10504	S. D. Layman, Whitesville, Ind	do	1866 and 1868	44.66
	do	do	1868 and 1869	42.14
10505	Joseph Nichols, Whitesville, Ind	do	1869 and 1780	25.74
10506	Benj. W. Addleman, White Water, Ind	do	1866 and 1868	69.80
10507	do	do	1872 and 1874	23.62
10508	James E. Williamson, Winchester, Ind	do	1866 and 1868	371.02
10509	Elisha Liston, Willow Branch, Ind	do	do	26.94
10510	James L. Smith, Willow Brach, Ind	do	1870 and 1872	18.40
	do	do	1872 and 1873	5.53
10511	O. T. Canfield, Wilmington, Ind	do	1866 and 1868	70.96
	do	do	1870 and 1871	4.17
10512	Henry D. Stewart, Wilmot, Ind	do	1866 and 1868	18.40
	do	do	1868 and 1870	9.84
	do	do	1870 and 1872	20.48
	do	do	1871 and 1873	6.16
10513	Peter Kraft, Winamac, Ind	do	1871 and 1872	61.95
	do	do	1872 and 1873	73.65
10514	William A. Thornburg, Windsor, Ind	do	1866 and 1867	49.35
10515	T. W. Thornburg, Windsor, Ind	do	1871 and 1872	21.84
10516	Isaac H. Thornburg, Windsor, Ind	do	1872	8.14
	do	do	1872 and 1874	11.90
10517	James S. Sanders, Winfield, Ind	do	1866 and 1868	17.41
	do	do	1870 and 1872	11.82
	do	do	1872 and 1873	8.85
10518	A. J. Wells, Winslow, Ind	do	1866 and 1868	192.14
10519	William M. Deiwert, Winterroud, Ind	do	1872 and 1873	3.93
10520	Elmer De Hart, Wirt, Ind	do	1866	14.15
10521	Amos A. Snyder, Wolcottville, Ind	do	1872 and 1874	41.48
10522	E. W. Matthews, Wolf Lake, Ind	do	1866 and 1868	105.90
10523	A. C. Hiner, Woodland, Ind	do	1871 and 1872	1.43
10524	S. Bassett, Woostertown, Ind	do	1866	10.26
10525	B. H. Vest, Woostertown, Ind	do	do	10.26
10526	John H. McFadden, Woostertown, Ind	do	1867 and 1868	61.59
	do	do	1870 and 1872	42.80
	do	do	1872 and 1873	10.69
10527	Albert Larr, Wright, Ind	do	1872 and 1874	7.28
10528	G. S. Jaquette, Wright's Corners, Ind	do	1866 and 1868	35.56
	do	do	1870 and 1872	43.34
	do	do	1872 and 1874	15.42
10529	Oliver Pugh, Wynadotte, Ind	do	1868 and 1869	7.14
10530	Stephen M. Aiken, Wynadotte, Ind	do	1869 and 1870	11.90
	do	do	1870 add 1871	8.62
10531	James Gregg, Wynn, Ind	do	1866	1.64
10532	Francis A. Gridley, Wynn, Ind	do	1866 and 1868	11.48
	do	do	1870 and 1872	4.76
	do	do	1872 and 1874	7.44
10533	Richard Powell, Xenia, Ind	do	1874	83.25
10534	Thomas J. Fay, Yankeetown, Ind	do	1869 and 1870	5.03
10535	George Dunnavan, York Centre, Ind	do	1866 and 1867	19.10

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10536	David G. Smith, York Centre, Ind	Compensation of postmasters readjusted, etc.	1867 and 1868	$12.48
	do	do	1868 and 1870	10.36
	do	do	1870 and 1872	8.84
10537	John Horne, Yorktown, Ind	do	1866 and 1868	92.38
	do	do	1870 and 1872	40.96
10538	John A. Spicknell, Yorkville, Ind	do	1872 and 1874	9.54
10539	James Meyers, Zenas, Ind	do	1866 and 1868	10.82
10540	Jeremiah S. Hull, Zenas, Ind	do	1871 and 1872	10.42
10541	Oscar F. Wilson, Zanesville, Ind	do	1866 and 1868	64.12
10542	David B. Waid, Zanesville, Ind	do	1870 and 1872	17.88
	do	do	1872 and 1874	64.72
10543	James Blake, Zionsville, Ind	do	1870 and 1871	98.21
	Total compensation of postmasters readjusted under act of March 3, 1883 (originally reported in Senate Ex. Doc. No. 116, Forty-ninth Congress, second session).			57,816.85
	Total claims for compensation of postmasters readjusted under the act of March 3, 1885, payable from appropriation, deficiency in postal revenues, 1885 and prior years.			160,286.05

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8609	M. E. Irwin, late postmaster Verona, Iowa, for commission in third quarter, 1878.	Deficiency in postal revenues, 1885 and prior years.	1879	$3.81
8610	J. C. Dupuyster, late postmaster Wickliffe, Ky., for clerk-hire under-credited in second quarter, 1881.	do	1881	22.50
8611	Mary E. Newton, late postmaster Vanceburgh, Ky., for clerk-hire under-credited in second quarter, 1881.	do	1881	18.05
8612	Mary E. Newton, late postmaster Vanceburgh, Ky., for clerk-hire under-credited in third quarter, 1881.	do	1882	8.[illegible]
8613	Occidental and Oriental Steam-ship Company: For transporting foreign closed mails from the United States to Hong-Kong and Yokohama during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 14835, dated September 20, 1886.	do	1879 and 1883	218.[illegible]
8614	Panama Railroad Company: For transporting the United States mails for the west coast of Mexico, Salvador, Republic of Honduras, Nicaragua, and Costa Rica, across the Isthmus of Panama for the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13172, dated August 11, 1886.	do	do	2,916.[illegible]
8615	Red D Line: For transporting foreign closed mails from the United States to Curacoa from January 1 to June 30, 1883, per order of the Postmaster-General, No. 15031, dated September 27, 1886.	do	1883	22.[illegible]
8616	Quebec Steam-ship Company: For transporting foreign closed mails from the United States to Barbadoes, Demarara, Trinidad, Grenada, and St. Thomas from January 1, 1881, to June 30, 1883, per order of the Postmaster-General, No. 14838, dated September 20, 1886.	do	1881 and 1883	6.[illegible]

Estimates for the payment of claims—Continued.

No. of certificate of claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8617	Pacific Mail Steam-ship Company: For transporting foreign closed mails from the United States to Hong-Kong and Yokohama during the period from January 1, 1881, to June 30, 1883, per order of the Postmaster-General, No. 15034, dated September 27, 1886.	Deficiency in postal revenues, 1885 and prior years.	1881 and 1883	$171.27
8618	The Cunard Line: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13876, dated August 26, 1886.	do	1879 and 1883	17,982.00
8619	The Inman Line: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13882, dated August 26, 1886.	do	do	4,391.11
8620	Hamburg-American Packet Company: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13888, dated August 26, 1886.	do	do	716.26
8621	North German Lloyd Steam-ship Company: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13219, dated August 12, 1886.	do	do	634.42
8622	White Star Line: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13879, dated August 26, 1886.	do	do	5,795.89
8623	The Liverpool and Great Western Steam-ship Company: For transporting foreign closed mails from the United States to Europe during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13885, dated August 26, 1886.	do	do	2,466.98
8624	New York, Havana, and Mexican Mail Steam-ship Company:			
	For transporting French closed mails from the United States to Cuba during the period from August 22, 1878, to June 30, 1883, per order of the Postmaster-General, No. 16455, dated October 29, 1886.	do	do	2,291.31
	For transporting French closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 16456, dated October 29, 1886.	do	1884	823.12
				3,114.43
8625	New York, Havana, and Mexican Mail Steam-ship Company:			
	For transporting foreign (except French) closed mails from the United States to Cuba for the first and second quarters 1883, per order of the Postmaster-General, No. 16459, dated October 29, 1886.	do	1883	366.75
	For transporting foreign (except French) closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 16460, dated October 29, 1886.	do	1884	733.49
				1,100.24

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8634	Northern Pacific Railroad Company, routes No. 26002 and 26021, Minnesota:			
	For transportation additional, at $25 per quarter, from December 17, 1877, to June 30, 1878, per order of the Postmaster-General, No. 743, dated January 26, 1885.	Deficiency in postal revenues, 1885 and prior years.	1878	$54.08
	For transportation additional, at $23.74½ per quarter, from July 1, 1878, to June 30, 1879, per order of the Postmaster-General, No. 743, dated January 26, 1885.	do	1879	94.98
	For transportation additional, at $23.74½ per quarter, from July 1, 1879, to June 30, 1880, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1880	94.98
	For transportation additional, at $23.74½ per quarter, from July 1, 1880, to June 30, 1881, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1881	94.98
	For transportation additional, at $23.74½ per quarter, from July 1, 1881, to June 30, 1882, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1882	94.98
				434.00
8635	Northern Pacific Railroad Company, routes No. 26001 and 26002, Minnesota:			
	For transportation additional, at $45.86 per quarter, from July 1, 1883, to January 20, 1884, per order of the Postmaster-General, No. 742, dated January 26, 1885.	do	1884	101.80
	For transportation additional, at $62.78 per quarter, from January 21, to June 30, 1884, per order of the Postmaster-General, No. 740, dated January 26, 1885.	do	do	111.76
				213.56
8636	Northern Pacific Railroad Company, route No. 26042, Minnesota, for transportation additional, at $715.10 per quarter, from June 2, to 30, 1884, per order of the Postmaster-General, No. 10840, dated July 21, 1885.	do		227.89
8637	Saint Louis and Cairo Railroad Company, route No. 23053, Illinois:			
	For deduction remitted July 22, 1886, being a part of deduction ($52.23) reported to Auditor January 24, 1884, on account of failures in fourth quarter, 1883.	do	do	6.07
	For deduction remitted July 22, 1886, being a part of deduction ($591.94) reported to Auditor May 6, 1884, on account of failures in first quarter, 1884.	do	do	434.14
	For deduction remitted July 22, 1886, being a part of deduction ($147.98) reported to Auditor July 18, 1884, on account of failures in second quarter, 1884.	do	do	120.42
				560.63
8638	Texas Pacific Railway Company, route No. 31009, Texas. For remission of deduction in third quarter, 1882, 47 cents; in fourth quarter, 1882, $2.58; in first quarter, 1883, $2.82, per order of the Postmaster-General, dated December 13, 1886.	do	1883	5.87
639	Cincinnati, Indianapolis, Saint Louis, and Chicago Railroad Company; routes No. 22003 and 22005, Indiana:			
	For remission of deduction in second quarter, 1883, per order of the Postmaster-General, dated December 15, 1886.	do	1883	144.45

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8626	New York and Cuba Mail Line:			
	For transporting French closed mails from the United States to Cuba during the period from August 17, 1878, to June 30, 1883, per order of the Postmaster-General, No. 16462, dated October 29, 1886.	Deficiency in postal revenues, 1885 and prior years.	1879 and 1883	$1,923.62
	For transporting French closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 16463, dated October 29, 1886.	do	1884	337.02
				2,260.64
8627	New York and Cuba Mail Line:			
	For transporting foreign (except French) closed mails from the United States to Cuba for the first and second quarters, 1883, per order of the Postmaster-General, No. 16466, dated October 29, 1886.	do	1883	132.25
	For transportation of foreign (except French) closed mails from the United States to Cuba during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 16467, dated October 29, 1886.	do		262.11
				394.36
8628	James N. Taylor, late postmaster, Reese, Mich.: For mail-messenger service for the quarter ended June 30, 1882, per orders of the Postmaster-General dated June 5, 1880, and May 22, 1882.	do	1882	37.50
8629	William H. Gounett, postmaster, Piermont, N. H.: For mail-messenger service from April 1 to June 30, 1883, per order of the Postmaster-General dated January 2, 1878.	do	1883	28.00
8630	Carl Greenwood, special carrier, Blaine, Minn.: For amount due for services from July 1, 1882, to June 30, 1884.	do	1883 and 1884	9.41
8631	Mary Meyer, postmaster, Banner, Wis.: For amount paid W. E. Meyer, special carrier, for services rendered from October 1, 1882, to December 31, 1882.	do	1883	3.77
8632	L. A. Hood, postmaster, Fisher's Island, N. Y.: For amount paid James Darrow, special carrier, for services rendered from July 1, 1882, to September 30, 1882, as per voucher on file.	do	do	40.54
8633	Chicago, Milwaukee and Saint Paul Railway Company, route No. 26012, Minnesota:			
	For deduction remitted December 11, 1886, being part of the deduction ($340.08) reported to Auditor April 30, 1881, on account of failures in first quarter 1881.	do	1881	19.50
	For deductions remitted December 11, 1886, being a part of deduction ($2.18) reported to Auditor April 5, 1882, on account of failures in second quarter 1882.	do	1882	.12
	For deductions remitted December 11, 1886, being a part of deduction ($296.48) reported to Auditor May 5, 1883, on account of failures in first quarter 1883.	do	1883	17.00
	For deductions remitted December 11, 1886, being a part of deduction ($4.36) reported to Auditor July 24, 1883, on account of failures in second quarter 1883.	do	1883	.24
	For deductions remitted December 11, 1886, being a part of deduction ($6.93) reported to Auditor May 8, 1884, for failures in first quarter 1884.	do	do	.40
				37.26

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8634	Northern Pacific Railroad Company, routes No. 26002 and 26021, Minnesota:			
	For transportation additional, at $25 per quarter, from December 17, 1877, to June 30, 1878, per order of the Postmaster-General, No. 743, dated January 26, 1885.	Deficiency in postal revenues, 1885 and prior years.	1878	$54.08
	For transportation additional, at $23.74¼ per quarter, from July 1, 1878, to June 30, 1879, per order of the Postmaster-General, No. 743, dated January 26, 1885.	do	1879	94.98
	For transportation additional, at $23.74¼ per quarter, from July 1, 1879, to June 30, 1880, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1880	94.98
	For transportation additional, at $23.74¼ per quarter, from July 1, 1880, to June 30, 1881, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1881	94.98
	For transportation additional, at $23.74¼ per quarter, from July 1, 1881, to June 30, 1882, per order of the Postmaster-General, No. 741, dated January 26, 1885.	do	1882	94.98
				434.00
8635	Northern Pacific Railroad Company, routes No. 26001 and 26002, Minnesota:			
	For transportation additional, at $45.86 per quarter, from July 1, 1883, to January 20, 1884, per order of the Postmaster-General, No. 742, dated January 26, 1885.	do	1884	101.80
	For transportation additional, at $62.78 per quarter, from January 21, to June 30, 1884, per order of the Postmaster-General, No. 740, dated January 26, 1885.	do	do	111.76
				213.56
8636	Northern Pacific Railroad Company, route No. 26042, Minnesota, for transportation additional, at $715.10 per quarter, from June 2, to 30, 1884, per order of the Postmaster-General, No. 10840, dated July 21, 1885.	do		227.89
8637	Saint Louis and Cairo Railroad Company, route No. 23053, Illinois:			
	For deduction remitted July 22, 1886, being a part of deduction ($52.23) reported to Auditor January 24, 1884, on account of failures in fourth quarter, 1883.	do	do	6.07
	For deduction remitted July 22, 1886, being a part of deduction ($501.94) reported to Auditor May 6, 1884, on account of failures in first quarter, 1884.	do	do	434.14
	For deduction remitted July 22, 1886, being a part of deduction ($147.98) reported to Auditor July 18, 1884, on account of failures in second quarter, 1884.	do	do	120.42
				560.63
8638	Texas Pacific Railway Company, route No. 31009, Texas. For remission of deduction in third quarter, 1882, 47 cents; in fourth quarter, 1882, $2.58; in first quarter, 1883, $2.82, per order of the Postmaster-General, dated December 13, 1886.	do	1883	5.87
639	Cincinnati, Indianapolis, Saint Louis, and Chicago Railroad Company; routes No. 22003 and 22005, Indiana:			
	For remission of deduction in second quarter, 1883, per order of the Postmaster-General, dated December 15, 1886.	do	1883	144.45

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9496	L. C. Brown, mail contractor, route No. 15373, Georgia:	Deficiency in postal revenues, 1885 and prior years.	1883	$45.22
	For amount of transportation from April 1, to November 1, 1882, at $17.50 per quarter $41.69			
	$8.75 less from October 15, 1882 ..... 1.71			
	39.38			
	One month's extra pay on curtailment 2.92			
	One month's extra pay on discontinuance 2.92			
9497	John R. Pearson, mail contractor, route No. 29222, Arkansas:			
	For remission of part of deduction reported May 5, 1883, on account of first quarter, 1883.	do	do	48.83
	For remission of part of deduction reported August 4, 1883, on account of second quarter, 1883.	do	do	18.11
	For remission of part of deduction reported October 27, 1883, on account of third quarter, 1883.	do	1884	24.90
	For remission of part of deduction reported February 2, 1884, on account of fourth quarter, 1883.	do	do	24.90
	For remission of part of deduction reported May 10, 1884, on account of first quarter, 1884.	do	do	6.03
	(Remissions all dated December 15, 1883.)			122.77
9498	California Southern Railroad Company, Route No. 46037 California; for remission of deduction in first quarter, 1884, per order of the Postmaster-General dated January 7, 1887.	do	1884	1,011.55
9499	Eugene L. Sayles, special carrier, Odessa, Dakota; for amount due for services in carrying United States mails, from April 6 to June 30, 1883.	do	1883	8.29
9500	John Hiley, late postmaster Gentryville, Ind.; for salary under-credited in second quarter, 1869.	do	1869	7.16
9501	James Martin, late postmaster Gentryville, Ind.; for salary under-credited in second quarter, 1869.	do	1869	3.34
9502	Ellen Thomas, postmaster Aqua Fria Valley, Arizona; for clerk hire under-credited in second quarter, 1884.	do	1884	24.72
9503	The Clyde Line, for transporting French closed mails from the United States to Havana, during the period from September 4, 1878, to December 1, 1880, per order of the Postmaster-General, No. 580, dated January 19, 1887.	do	1879–'80–'81	334.47
9504	The Clyde Line, for transporting foreign closed mails from the United States to Turk's Islands during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 581, dated January 19, 1887.	do	1884	4.02
	Total of scheduled claims for deficiency in postal revenues 1885 and prior years (originally reported in House Ex. Doc. No. 180, Forty-ninth Congress, second session).			1,654.79
15	C. Ellwood, mail messenger, Illinois; for temporary mail messenger-service at Sycamore, Ill., from July 1 to December 4, 1879 (at $100 per annum), per order of the Postmaster-General, dated April 30, 1884 (originally reported in Senate Ex. Doc. No. 110, Forty-ninth Congress, second session).	do	1880	42.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8639	Cincinnati, Indianapolis, Saint Louis, and Chicago Railroad Company; routes No. 22006 and 22005, Indiana, etc. (Continued):			
	For remission of deduction in fourth quarter, 1883, per order of the Postmaster-General, dated December 15, 1886.	Deficiency in postal revenues, 1885 and prior years.	1884	$49.35
	For remission of deduction in fourth quarter, 1883, per order of the Postmaster-General, dated December 14, 1886.	do	1884	3.33
				197.13
8640	Louisville, New Orleans and Texas Railway Company; route No. 30014, Louisiana. For transportation, at $2,025.58 per quarter, from March 20 to June 30, 1884, per order of the Postmaster-General, No. 1161, dated February 9, 1886, amounting to $2,292.69, less deductions, $22.18.	do	1884	2,270.51
8641	Texas Western Railway Company, route No. 31020, Texas. For transportation, at $119.70 per quarter, from August 1, 1882, to June 30, 1883, per order of the Postmaster-General, No. 6946, dated June 1, 1886, amounting to $438.47, less deductions, $59.85.	do	1883	378.62
8642	Texas Western Railway Company, route No. 31020, Texas. For transportation, at $119.70 per quarter, July 1, 1883, to June 30, 1884, per order of the Postmaster-General, No. 6946, dated June 1, 1886, amounting to $478.80, less deductions, $220.32.	do	1884	258.48
8643	George K. Otis, mail contractor, routes No. 6771 and 6772, New York. For remission of deduction from April 1, to June 30, 1883.	do	1882 and 1883	947.74
8644	A. T. Bush, late mail contractor, route No. 10567, Missouri. For amount of auditor's draft, No. 8971, dated November 5, 1860, drawn on E. Taylor, postmaster at Calhoun, Mo., returned to this office unpaid and canceled.	do	1861	143.81
8645	J. H. Finks, clerk United States District Court, northern district of Texas. For fees in the case of the United States *v.* C. W. Clifton, late postmaster, Greenwood, Tex., $1.40; and Thomas D. Farris, late postmaster, Grandview, Tex., $38.15; July 1, 1883, to June 30 1884.	do	1884	39.55
8646	John Grant, late mail contractor route No. 8157, Louisiana. For transportation from January 1 to March 31, 1861, at $2,500.00 per annum amounting to the sum of $625, less the amount of collections from postmasters on the route for the quarter ended March 31, 1861, amounting to sum of $69.08.	do	1861	555.92
	Total of scheduled claims for deficiency in postal revenues, 1885 and prior years (originally reported in House Ex. Doc. No 49, Forty-ninth Congress, second session).			48,634.96
9495	William H. Moore, for amount of recognized service on route No. 10703 Missouri, from July 1, to September 30, 1860, at the rate of $373 per annum, per order of the Postmaster-General, No. 14563, dated September 16, 1884.	Deficiency in the postal revenues 1885 and prior years.	1861	93.25

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
9496	L. C. Brown, mail contractor, route No. 15373, Georgia:	Deficiency in postal revenues, 1885 and prior years.	1883	$45.22
	For amount of transportation from April 1, to November 1, 1882, at $17.50 per quarter..... $41.09			
	$8.75 less from October 15, 1882..... 1.71			
	39.38			
	One month's extra pay on curtailment..... 2.92			
	One month's extra pay on discontinuance 2.92			
9497	John R. Pearson, mail contractor, route No. 29222, Arkansas:			
	For remission of part of deduction reported May 5, 1883, on account of first quarter, 1883.	do	do	48.83
	For remission of part of deduction reported August 4, 1883, on account of second quarter, 1883.	do	do	18.11
	For remission of part of deduction reported October 27, 1883, on account of third quarter, 1883.	do	1884	24.90
	For remission of part of deduction reported February 2, 1884, on account of fourth quarter, 1883.	do	do	24.90
	For remission of part of deduction reported May 10, 1884, on account of first quarter, 1884.	do	do	6.03
				122.77
	(Remissions all dated December 15, 1886.)			
9498	California Southern Railroad Company, Route No. 46037 California; for remission of deduction in first quarter, 1884, per order of the Postmaster-General dated January 7, 1887.	do	1884	1,011.55
9499	Eugene L. Sayles, special carrier, Odessa, Dakota; for amount due for services in carrying United States mails, from April 6 to June 30, 1883.	do	1883	8.29
9500	John Hiley, late postmaster Gentryville, Ind.; for salary under-credited in second quarter, 1869.	do	1869	7.16
9501	James Martin, late postmaster Gentryville, Ind.; for salary under-credited in second quarter, 1869.	do	1869	3.34
9502	Ellen Thomas, postmaster Aqua Fria Valley, Arizona; for clerk hire under-credited in second quarter, 1884.	do	1884	24.72
9503	The Clyde Line, for transporting French closed mails from the United States to Havana, during the period from September 4, 1878, to December 1, 1880, per order of the Postmaster-General, No. 580, dated January 19, 1887.	do	1879–'80–'81	334.47
9504	The Clyde Line, for transporting foreign closed mails from the United States to Turk's Islands during the fiscal year ended June 30, 1884, per order of the Postmaster-General, No. 581, dated January 19, 1887.	do	1884	4.02
	Total of scheduled claims for deficiency in postal revenues 1885 and prior years (originally reported in House Ex. Doc. No. 180, Forty-ninth Congress, second session).			1,654.79
9505	C. Eilwood, mail messenger, Illinois; for temporary mail messenger-service at Sycamore, Ill., from July 1 to December 4, 1879 (at $100 per annum), per order of the Postmaster-General, dated April 30, 1884 (originally reported in Senate Ex. Doc. No. 110, Forty-ninth Congress, second session).	do	1880	42.66

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10544	Wm. Budd Deacon, late United States marshal northern district New Jersey:			
	For amount fees in the case of the United States *vs.* Geo. B. Cooper, late postmaster Seabright, N. J.	Deficiency in postal revenues, 1885 and prior years.	1885	$7.90
	For fees in the case of the United States *vs.* William K. Schenck, late postmaster Linden, N. J.	do	do	7.50
				15.40
10545	F. S. Heffernan, attorney-at-law, Springfield, Mo.; for fees for legal services in the case of the United States *vs.* George R. Thompson, L. E. Clement, and George Huitt, charged with robbing the United States postal car on the Arkansas Branch of the Saint Louis and San Francisco Railroad, between Plymouth Junction and Pierce City, Mo., of a large amount of registered mail matter, the account being approved by the Postmaster-General and the Acting Attorney-General of the United States. Services rendered in February and March, 1885.	do	do	100.00
10546	Anthony Q. Keasbey, United States attorney for the district of New Jersey; for fees in the case of the United States *vs.* William K. Schenck, late postmaster at Linden, N. J. Verdict rendered for the United States February 6, 1885.	do	do	20.00
10547	J. H. Finks, clerk United States district court for the northern district of Texas; for fees in civil post-office cases from July 1, 1884, to June 30, 1885, as follows:			
	United States *vs.* John F. Witt, failing contractor, routes 8595, 8597, 8601, 8654, 8687.	do	do	3.45
	United States *vs.* John Standifee, late postmaster Denton, Tex.	do	do	1.55
	United States *vs.* C. W. Clifton, late postmaster Greenwood, Tex.	do	do	10.25
	United States *vs.* T. D. Harris, late postmaster Grandview, Tex.	do	do	1.05
	(The above four claims were originally reported to the Forty-ninth Congress, second session, in the deficiency estimates, House Ex. Doc. No. 89, but now included as allowed claims.)			16.30
10548	A. J. Auxier, late United States marshal for the district of Kentucky; for fees in the case of the United States *vs.* J. B. Morris, late postmaster at Bardstown, Ky., third quarter, 1884.	do	do	19.85
	(Originally included in House Ex. Doc. No. 182, Forty-ninth Congress, second session.)			
A 1	Central Pacific Railroad Company, California; for transportation over the following routes:			
	No. 46001, from October 1, 1883, to June 30, 1884.	do	1884	24,074.54
	No. 46003, from October 1, 1883, to June 30, 1884.	do	do	18,163.65
	No. 46010, from October 1, 1883, to June 30, 1884.	do	do	16,048.38
	No. 46026, from October 1, 1883, to June 30, 1884.	do	do	424.77
	No. 46028, from October 1, 1883, to June 30, 1884.	do	do	3,089.19
	No. 46029, from October 1, 1883, to June 30, 1884.	do	do	29.28
	(Originally reported in House Ex. Doc. No. 280, Forty-ninth Congress, first session, page 3.)			61,829.81

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount
A 2	Central Pacific Railroad Company, California; for transportation over the following routes:			
	No. 46001, from July 1, 1884, to June 30, 1885.	Deficiency in postal revenues, 1885 and prior years.	1884	$30,327.68
	No. 46003, from July 1, 1884, to June 30, 1885.	do	do	21,017.48
	No. 46010, from July 1, 1884, to June 30, 1885.	do	do	21,386.84
	No. 46026, from July 1, 1884, to June 30, 1885.	do	do	566.36
	No. 46028, from July 1, 1884, to June 30, 1885.	do	do	4,118.92
	No. 46029, from July 1, 1884, to June 30, 1885.	do	do	39.04
	(Originally reported in House Ex. Doc. No. 280, Forty-ninth Congress, first session, page 2.)			77,456.32
A 3	Central Pacific Railroad Company, California:			
	For transportation, additional route No. 46003, California, at $952.63 per quarter, from September 15, 1884, to June 30, 1885, per order of the Postmaster-General, No. 14624, dated September 14, 1886 (originally reported to the Forty-ninth Congress, second session, in the deficiency estimates, House Ex. Doc. No. 89, page 23, but now included as an allowed claim).	do	do	3,023.56
	Total scheduled claims for deficiency in postal revenue, 1885 and prior years.			192,813.65
	Grand total claims allowed by the Sixth Auditor, payable from the appropriation deficiency in the postal revenues, 1885 and prior years.			353,099.70

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 33.

REDUCTION OF ROUND VALLEY INDIAN RESERVATION.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A communication from the Secretary of the Interior, submitting draught of a bill "to provide for the reduction of the Round Valley Indian Reservation, California, and for other purposes."

JANUARY 5, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a communication of 23d ultimo from the Secretary of the Interior, submitting a draught of a bill "to provide for the reduction of the Round Valley Indian Reservation, in the State of California, and for other purposes," with accompanying papers relating thereto.

The documents thus submitted exhibit extensive and entirely unjustifiable encroachments upon lands set apart for Indian occupancy, and disclose a disregard of Indian rights so long continued, that the Government can not further temporize without positive dishonor.

Efforts to dislodge trespassers upon these lands have in some cases been resisted, upon the ground that certain moneys due from the Government for improvements have not been paid. So far as this claim is well founded, the sum necessary to extinguish the same should be at once appropriated and paid.

In other cases the position of these intruders is one of simple and bare-faced wrong-doing, plainly questioning the inclination of the Government to protect its dependent Indian wards, and its ability to maintain itself in the guaranty of such protection.

These intruders should forthwith feel the weight of the Government's power.

I earnestly commend the situation and the wrongs of the Indians occupying the reservation named to the early attention of the Congress, and ask for the bill herewith transmitted careful and prompt consideration.

GROVER CLEVELAND.

EXECUTIVE MANSION,
January 5, 1888.

Estimates for the payment of claims—Continued.

No. of certificate or claim.	Name of postmaster and post-office.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
10536	David G. Smith, York Centre, Ind	Compensation of postmasters readjusted, etc.	1867 and 1868	$12.48
	do	do	1868 and 1870	10.36
	do	do	1870 and 1872	8.84
10537	John Horne, Yorktown, Ind	do	1866 and 1868	92.28
	do	do	1870 and 1872	40.96
10538	John A. Spicknell, Yorkville, Ind	do	1872 and 1874	9.54
10539	James Meyers, Zenas, Ind	do	1866 and 1868	10.82
10540	Jeremiah S. Hull, Zenas, Ind	do	1871 and 1872	10.42
10541	Oscar F. Wilson, Zanesville, Ind	do	1866 and 1868	64.12
10542	David B. Waid, Zanesville, Ind	do	1870 and 1872	17.68
	do	do	1872 and 1874	64.72
10543	James Blake, Zionsville, Ind	do	1870 and 1871	98.21
	Total compensation of postmasters readjusted under act of March 3, 1883 (originally reported in Senate Ex. Doc. No. 116, Forty-ninth Congress, second session).			57,816.85
	Total claims for compensation of postmasters readjusted under the act of March 3, 1885, payable from appropriation, deficiency in postal revenues, 1885 and prior years.			160,286.05

No. of certificate or claim.	Name of claimant.	Appropriation from which payable.	Fiscal year in which expenditure was incurred.	Amount.
8609	M. E. Irwin, late postmaster Verona, Iowa, for commission in third quarter, 1878.	Deficiency in postal revenues, 1885 and prior years.	1879	$3.81
8610	J. C. Dupuyster, late postmaster Wickliffe, Ky., for clerk-hire under-credited in second quarter, 1881.	do	1881	22.50
8611	Mary E. Newton, late postmaster Vanceburgh, Ky., for clerk-hire under-credited in second quarter, 1881.	do	1881	18.05
8612	Mary E. Newton, late postmaster Vanceburgh, Ky., for clerk-hire under-credited in third quarter, 1881.	do	1882	8.20
8613	Occidental and Oriental Steam-ship Company: For transporting foreign closed mails from the United States to Hong-Kong and Yokohama during the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 14835, dated September 20, 1886.	do	1879 and 1883	218.28
8614	Panama Railroad Company: For transporting the United States mails for the west coast of Mexico, Salvador, Republic of Honduras, Nicaragua, and Costa Rica, across the Isthmus of Panama for the period from April 1, 1879, to June 30, 1883, per order of the Postmaster-General, No. 13172, dated August 11, 1886.	do	do	2,916.95
8615	Red D Line: For transporting foreign closed mails from the United States to Curacoa from January 1 to June 30, 1883, per order of the Postmaster-General, No. 15031, dated September 27, 1886.	do	1883	22.73
8616	Quebec Steam-ship Company: For transporting foreign closed mails from the United States to Barbadoes, Demarara, Trinidad, Grenada, and St. Thomas from January 1, 1881, to June 30, 1883, per order of the Postmaster-General, No. 14838, dated September 20, 1886.	do	1881 and 1883	6.67

general of California, May 4, 1860, showing the reservation to be situated partly in townships 22 and 23 north of ranges 12 and 13 west of the Mount Diablo meridian, and to comprise 25,030.8 acres.

On the 27th of October, 1863, an appraisement of the claims and improvements of settlers in the valley was reported by Superintendent Steele, the value of the same, including growing crops, being placed at $50,000, and of their stock at $25,000 additional.

By the act of Congress approved April 8, 1864 (13 Stats. L., 39), it was provided:

> That there shall be set apart by the President, and at his discretion, not exceeding four tracts of land within the limits of said State (California), to be retained by the United States for the purpose of Indian reservations.

It was also provided that if it was found impracticable to establish the reservations contemplated, without embracing improvements made within their limits by white persons lawfully there, the Secretary of the Interior might contract for the purchase of such improvements, but that no money should be paid until the valuation had been approved by Congress, and an appropriation made therefor.

It was further provided that such reservations might include any reservations theretofore established, in which case the same might be enlarged by the President.

In a report dated January 1, 1867, Special Commissioner Stevens gave the names of twenty-six settlers in the valley who had 9,990 acres of land (an average of 384 acres each) and stated that there were also fifteen or twenty persons with a small cabin and inclosure, each claiming a quarter section.

October 7, 1869, report was made to the Department, recommending that Superintendent McIntosh be instructed to report the reserve extended to the summits of the mountains surrounding the valley—to report an appraisement of the improvements of settlers within said valley, and also to report a contract with the settlers for their purchase, in order that the same might be reported for the action of Congress, as provided in the act of April 8, 1864.

These recommendations were approved by the Department October 12, 1869, and Superintendent McIntosh was instructed accordingly on the 18th of the same month.

December 27, 1869, Superintendent McIntosh submitted his report, including an appraisement of the improvements of settlers in the valley, amounting in the aggregate to $109,555.

In many cases settlement and improvements had been made long after the survey of the reservation in 1860, and in others settlers had purchased, after that time, improvements which had been made before.

Some of the persons whose improvements were appraised had been officers and employés of the Indian Department at the time settlement was made or the improvements purchased.

The contracts for the purchase of improvements were not made because Superintendent McIntosh was in doubt as to the rights of these parties, and for other reasons.

March 4, 1870, this report was submitted to the Department, with request for the direction of the Secretary in the premises, in order that the superintendent might be properly instructed in the course he should pursue in making contracts for the improvements of settlers upon the reservation, and with recomendation that the President be requested to issue an executive order for the enlargement of the Round Valley Reservation.

On the 30th of March the President issued the executive order requested, and on April 1, 1870, the papers were returned without remark upon the request for instruction as to the settlers.

I am unable to find anything of record to show that this appraisement was ever presented to Congress, or that any further action was taken thereon by the Department.

From the first establishment of this reservation, in 1856, the settlers then there, re-enforced by those who came in afterward—some of them Government employés and others allowed to settle by the agents in charge—protested against the occupation of the valley for Indian purposes, and used every effort to defeat the intentions of the Department on the premises.

In August, 1862, a party of twenty settlers surprised a band of Indians, and murdered twenty-two of their number, of all ages and both sexes.

The intended attack was known to the employés (Short & Sons, who afterwards became "settlers" on the reservation), who not only took no steps to prevent the massacre, but kindly loaned their revolvers to the intending murderers.

The excuse for this act of barbarity was that the Indians had killed some of the stock belonging to the settlers.

Attempts were also made to pay the settlers and remove them from the reservation, but this was unsuccessful, undoubtedly owing to the influence of the interested parties, who preferred to retain their locations in the valley.

In November, 1862, a company of troops was posted on the reservation, and the officer in command instructed by General Wright to remove all persons then residing within its limits on the requisition of the supervisor in charge.

November 14, 1862, Superintendent Hanson reported to this office that as the season was advancing and he was not disposed to distress the settlers, he had given the supervisor instructions to permit them to remain in the valley until the weather was auspicious, and they could have time to dispose of their produce and look for other homes, provided they would give assurances not to molest the Indians or Government property.

I find nothing further relative to this attempt to dispossess the settlers by force.

In his annual report for 1869, Superintendent Whiting referred to Round Valley as the most desirable location for an Indian reservation in the State, and said:

> The Government has about 5,000 acres only inclosed out of 25,000 reserved.
>
> The settlers have appropriated the other 20,000, besides much more in the foot-hills. Possessory claims on reservation lands are selling for nearly as much as if the settlers had the fee simple. Large herds of cattle and sheep are also driven into the valley and in the foot-hills by persons having no pretense of claim to the land. This stock, belonging to strangers, is consuming much of the pasturage needed for reservation animals.
>
> The Indian agent and Government employés are wholly unable to prevent these encroachments. (Annual Report Commissioner of Indian Affairs, 1869, p. 180.)

In his annual report for 1870 Superintendent McIntosh said:

> In my supplementary report made last year I expressed the opinion that all persons who moved within the area of Round Valley, after public notice was given by the Government, through its proper agent, that it intended to hold the whole of Round Valley for Indian purposes, and forbidding any other persons from locating therein, were interlopers, and could make no just claim upon the Government for their improvements. I have not changed that opinion. It is for the Government to decide whether it will pay a premium to persons who deliberately violate its express

orders. The importance of having the whole of Round Valley for an Indian reservation, free from all outside influences, has been so many times represented to you by me during the past year that I forbear pressing the subject any further. (Annual Report Commissioner of Indian Affairs for 1870, p. 76.)

In a report made in 1871, Hon. John V. Farwell said:

There are at present about one hundred settlers in the valley, all of them squatters, knowing when they came that it was set aside for Indian occupancy, but the fact that no survey has been made has emboldened some of them to take up claims inside the reservation fences, under the swamp-land act. I rode over these swamp lands, and should consider them as valuable for cultivation as any in the valley. One large farm of 2,500 acres is claimed by a former superintendent, and I was informed that the work of fencing, etc., was all done by Indians. Timber claims and cattle ranges have been taken by these settlers upon the mountains until the reservation cattle have been driven from their accustomed places for feeding, and are shot at sight when found upon a range taken up by a white settler. On some of the timber claims thus made the claimants threaten to shoot any Indian sent there by the agent to get timber for fences or houses. (Annual Report of Commissioner of Indian Affairs for 1871, p. 155.)

In a report dated January 31, 1871, upon a bill for the restoration of a portion of the Round Valley Reservation, Commissioner Parker, after reciting the history of the reservation, said:

The effect of the bill, if it becomes a law, will be direct confliction with the policy of the Department, and if its provisions should be executed and the majority of this valley pass into the ownership and occupancy of whites, the usefulness of the remainder for Indian purposes would be virtually destroyed.

In office report dated October 17, 1871, it was recommended that the Attorney-General be requested to institute proceedings against all persons within Round Valley in all cases where he should be of the opinion that action for trespass could be maintained.

November 6, 1871, certified copies of the papers relating to the case were transmitted to Superintendent Whiting for use of the district attorney, with a full statement of facts, with directions to render the district attorney all facilities in the prosecution of cases arising under instructions given him by the Attorney-General in pursuance of the foregoing recommendation.

In office report dated January 29, 1872, Commissioner Walker opposed any reduction of the reservation, deeming it essential for the best interests of the Indian service and for the maintenance of the integrity of the reservation that the boundaries as extended by the executive order of March 30, 1870, should be preserved. (See also another report of same date, H. R. Ex. Doc. No. 224, Forty-second Congress, second session.)

In a report dated June 3, 1872, Superintendent Whiting reported that suit had been commenced against two of the trespassers, as test cases, but that on the 3d of April preceding, the district attorney had received a telegraphic dispatch and order from the Attorney-General to suspend proceedings against the settlers until further instructions.

Superintendent Whiting remarked that he was not suprised at this action, as he knew that an assessment had been levied upon the settlers to raise funds with which to send an attorney to Washington, and said:

So long as the settlers maintain a paid lobby in Washington it will require vigilance on behalf of the Indian Department to prevent further mischief and to keep what little possession we have left in Round Valley.

He also suggested an enlargement of the reservation.

January 27, 1873, this office, in reporting upon "a bill to provide for the sale to actual settlers of the surplus lands of the Round Valley Indian Reservation," stated that it was not *in possession* of any impor-

tant facts in addition to those set forth in office report of January 29, 1872.

On the 3d of March, 1873, Congress passed "An act to restore a part of the Round Valley Indian Reservation in California to the public lands, and for other purposes." (17 Stats., 633.)

It does not appear that any report was ever made by this office in relation to this act. Certainly no favorable recommendation was made.

The first section of the act provided:

> That all that portion of the Indian reservation in Round Valley, California, which lies south of the township line running east and west between townships 22 and 23 north, of ranges 12 and 13 west of the Mount Diablo meridian be, and the same is hereby, restored to the public lands of the United States, and the Secretary of the Interior shall cause the same to be surveyed and offered for sale in legal subdivisions, at not less than $1.25 per acre: *Provided*, That the improvements owned by persons on the lands hereby restored before the passage of this act shall be the sole property of such persons. * * * *And provided further*, That the proceeds of the sale of the lands hereby restored, or so much thereof as may be necessary, shall be used to pay the improvements and claims of settlers now residing within the limits of the new reservation created under this act, and for improvements of Indians on lands hereby restored to the public lands, after such improvements shall have been appraised and the appraisement approved as hereinafter provided.

The second section defined the southern, eastern, and western boundaries of the reservation, and provided for the appointment of three commissioners to establish the northern boundary.

It also directed that these commissioners should make an appraisement of all improvements of white persons situated north of the southern boundary of the reservation, as established under the act, and authorized the Secretary of the Interior to pay for these improvements out of the money reserved for the purpose by the first section of the act.

The third section directed the President to cause to be withdrawn from sale or entry all the land lying within the boundaries described by the second section and the northern boundary as fixed by the commission, when approved, and required all settlers within the limits of the reservation to remove therefrom *as soon as they should be paid for or tendered the amount of the appraised value of their improvements.*

Under this act Hons. J. P. C. Shanks, Charles Marsh, and B. R. Cowen were designated a commission to make the appraisements and to fix the northern boundary.

On the 18th of November, 1873, the commission submitted a report of their appraisements of the improvements, with their recommendation as to the establishment of the northern boundary of the reservation (see H. R. Ex. Doc. No. 118, Forty-third Congress, first session), which was approved by the Department, August 4, 1874.

The total value of the improvements as appraised was $32,669.78.

On the 18th of May, 1875, an Executive order was issued defining the reservation in accordance with the act of March 3, 1873, and the report of the commission.

By Executive order of July 26, 1876, the land embraced in the military reservation known as Camp Wright was reserved for the use and occupation of the Round Valley Indians, making the area of the reservation 102,118 acres.

(The outboundaries were surveyed in December, 1876, and January, 1877, and the survey approved January 17, 1877.)

The effect of the action taken under the act of March 3, 1873, was to restore some 12,000 acres of valley land to the public domain, and to add some 89,000 acres of mountain land to the reservation.

The commissioners, in their report, estimated the lands restored to be worth some $54,400, and suggested an amendment to the act so as to authorize said lands to be appraised and offered for sale.

A draught of a bill for this purpose was submitted to the Department January 27, 1874, but it did not become a law.

The sum of $17,934.37 was realized from the sale of the restored lands, and the sum of $21,640 was paid in settlement of a portion of the claims of settlers within the new reservation.

In a letter dated February 27, 1875, Agent Burchard reported that news had just reached the valley that the Senate had defeated the amendment to the act of 1873, whereupon the work of "land-jumping," previously commenced, was intensified, it being done within the lines of the new reservation as well as within the lines established by the McIntosh survey and order of 1870.

On the 17th of March, 1875, Agent Burchard was instructed to notify all white persons who had established themselves within the boundaries of the Round Valley Reserve as created by the act of 1873, since the date of the act, that they must leave the reservation within thirty days or measures would be taken by the Government for their ejection.

As a result of this action, Agent Burchard took the bond of one party to remove his stock within twenty-four hours, and to comply with the rules and regulations of the reservation. He also notified seven other persons that they must leave the reservation.

In March, 1873, the United States brought suit in the circuit court for the district of California against Fred Bourne, administrator of C. H. Bourne and others, to recover possession of certain lands in the reservation claimed by these parties in part, by purchase from the State of California, by which they were claimed as "swamp and overflowed lands."

In a report dated April 30, 1875, Inspector Vandever referred to the reservation as follows:

> These claimants occupy and claim nearly all the land and pasture outside of the reservation fences, to the exclusion of the Indians, and reservation cattle are allowed little or no participation in the range. Not one of these claimants but who located on the land he occupies with the full knowledge that he was within the reservation boundaries. * * *
>
> This act (1873) was passed at the solicitation of and in the interest of the settlers, as a final compromise and settlement of their supposed rights and claims. * * * The amount realized from the sale of lands south of the designated line is not sufficient to pay the whole appraisement of claims and improvements situated north of the line, and Congress, at its last session, failed to provide for the deficiency. In consequence of this failure many of the settlers seem to infer that Congress never will appropriate money to extinguish their claims, and they freely express the hope that the reservation may be ultimately abandoned, and the land surveyed and opened to entry. * * * It is very important that this question should be settled with the least possible delay, as efforts will be made to defer or finally defeat the payment altogether, and thus retain possession of the land.

June 21, 1875, Agent Burchard was directed—

> To make payment to the settlers in accordance with previous instructions without further delay, at the same time giving them notice that they must leave the reserve on or before the 31st day of October next, *and in case of their refusal to do so at that time you will call upon the military authority to assist you in removing them.*

July 2, 1875, Agent Burchard recommended and asked for authority to notify such parties as had been tendered the appraised value of their improvements to vacate or leave the reservation on or before the 30th day of September, 1875, and on July 17, 1875, he was authorized to issue such notices.

On the 11th of September, 1875, he was again directed to carry out the instructions theretofore given. September 25, 1875, Hon. A. C.

Barstow, a member of the board of Indian commissioners, was requested to visit the Round Valley Reservation, to make a thorough investigation of the grounds upon which the settlers refused to accept compensation for their improvements, and to advise with Agent Burchard as to the best course to be pursued in securing their removal from the reservation, and submit a full and complete statement in regard to the reserve, the claimants remaining upon it, and the character of their claims.

He was also requested to have his report embrace such information as would enable the office to fully understand the state of affairs on the reserve and take intelligent action relative thereto, and, if he found that military force would be required, to confer with General Schofield upon the subject, in order that when the force should be requested by this Department the commander of the military division might have a full understanding of the subject.

October 27, 1875, he submitted his report, in which, after referring to the manner in which Commissioners Shanks, Owen, and Marsh had discharged their duties, he stated:

> The case is so clear, the needs of the reservation so great, and delay from one cause and another so full of danger, that I recommend the ejectment by military force under the command of a wise and prudent officer.

On the same day the Commissioner of Indian Affairs requested that he be authorized to cause the removal from the reservation of all settlers who had received or been tendered the amount of the appraised value of their improvements, and that the Secretary of War be requested to give directions to the proper military officer to furnish such force as might be necessary to enable the agent to effect such removal.

On the next day, October 28, 1875, the Secretary granted authority, and made request of the War Department as recommended. On the same day Agent Burchard was informed of the action taken and instructed to carry the purpose of the office into effect.

Inspector Vandever was also instructed on the same day to proceed to the Round Valley Reservation and render Agent Burchard all the cooperative assistance in his power in accomplishing the object of his instructions.

Under date of November 20, 1875, Inspector Vandever forwarded to this office an opinion of the United States district attorney for California, to the effect that, in view of the act of March 3, 1873, the facts to justify a forcible removal must first be judicially ascertained, and that the inspector would not be justified in invoking the aid of the military in the first instance.

November 22, 1875, Inspector Vandever, referring to the opinion of the district attorney, said:

> Three of the settlers—Thompson, Eberle, and Bowen—have accepted the tender, put the money in their pockets, and refuse to remove. Frank Asbel, Pierce Asbel, and Gibson refuse the tender and remain. The three last named, whose improvements are of little value, hold a range of many thousand acres, comprising the best pasture lands on the reservation. In utter disregard of law and equity, the six men above named defy the Government and retain possession. Their presence is undeniably detrimental to the peace and welfare of the Indians, and I recommend that specific orders be made, under section 2149 of the Revised Statutes of the United States, directing their removal. * * * A combination has been formed by a few unscrupulous men to dispossess the Indians of the Round Valley Reservation.
>
> The act of March 3, 1873, was intended as a division of the old reservation between the settlers and the Indians. The combination took its part under that act, and now the men comprising it are endeavoring to filch the balance.

November 30, 1875, the matter was again presented to the Department, as follows:

The Department and the Government is suffering great discredit at the present time for failure to insist upon keeping lands for the use of the Mission Indians in 1871.

The sorrows of those Indians and the public disgrace attaching to their ill-treatment has arisen from the yielding to the demands of white men who were determined to prevent them from securing permanent homes on the reservation set apart for them. I trust no such record will be found hereafter relating to the Round Valley Reserve. The agent has been instructed, under date of October 28, to eject these settlers; but he is unable to do so without the aid of the military.

I respectfully request that steps be taken to secure positive directions through the War Department to act immediately on the request of Inspector Vandever or of Agent Burchard.

Under date of December 2, 1875, the Secretary replied that as the power to employ the military forces to remove the settlers from Round Valley appeared to be doubtful, legal proceedings should be taken for their removal by the civil authorities.

Thus ended the first attempt after the passage of the act of 1873 to remove the settlers by force.

December 7, 1875, Agent Burchard was instructed to confer with the district attorney with a view to instituting legal proceedings for ejectment of settlers.

During the years 1876, 1877, and 1878, frequent reports were made by this office urging speedy action of the district attorney, and giving its views at length on the legal aspect of the cases against the settlers.

On the 31st of May, 1880, the circuit court rendered judgment confirming Eberle, Thompson, and Bowen in the occupation and ownership of the "swamp lands" purchased of the State, and also confirming the right of Frank Asbill, Pierce Asbill, and E. S. Gibson, to occupy large tracts of lands described by metes and bounds in the judgment of the court.

As to the last three persons the court found as follows:

That as to defendants Gibson, Frank M. Asbill, and Pierce Asbill, who entered upon the lands possessed by them before said lands were included in said reservation, the act of Congress, entitled "An Act to restore a part of the Round Valley Indian Reservation in California to the public lands, and for other purposes," approved March 3, 1878, under which this proceeding is had, recognizes their rights, respectively, to retain possession of the lands in their several possessions, being the lands specifically described in their several answers, until an appraisement and payment or tender to them, by the plaintiff, of appraised value of all their improvements, and as the Commissioners refused to examine or to appraise the larger part of their several improvements, and no payment or tender of the appraised value was made therefor, the Conditions prescribed by said act, precedent to the right of said plaintiff to take or recover possession of said lands for the purposes of said act, have not been performed by plaintiff, and the plaintiff is not yet entitled under said act to recover of said defendants the possession of said lands so described in the respective answers of said last-named defendants.

Gibson's improvements had been appraised at $1,000. The court found that he had other improvements to the value of $1,100.

Gibson occupied from 10,000 to 12,000 acres of land, the possession of which was awarded him by the court, and, with his partners, he now occupies some 28,000 acres.

As to the failure of the Commission to appraise all his improvements, Commissioner Barstow, in his report of October 27, 1875, says:

E. S. Gibson, who is occupying 10,000 to 12,000 acres of mountain land for a sheep ranch, complains that the Commissioners did not allow him for eight cabins used by his herders, which are scattered over this large tract.

The Commissioners wisely refused to allow for improvements made upon more land than a settler would have a right to pre-empt when opened by survey.

Gibson was formerly an employé of the Indian Department. His

name does not appear in the appraisement made by General McIntosh, but the improvements of Henley Brothers, his present partners, sons of Superintendent Henley, who settled in 1857, were appraised at $11,000.

Pierce Asbill's improvements were appraised at $580. The court found that he had other improvements valued at $725.

The note-book of the Commissioners contains the following entry relative to this case:

His house, barn, etc., are south of the township line, and therefore not appraised.

Inspector Vandever says:

Pierce Asbill lives south of the line, and the law provides that only those *residing* north of the line shall be allowed for improvements.

Frank Asbill's improvements were appraised at $304.78. The court found that he had other improvements valued at $1,000.

The Asbills now occupy 8,500 acres. They settled in the reservation some years after it was set aside.

As to the "swamp lands," it may be remarked that by the act of May 14, 1862, the legislature of the State of California granted all lands belonging to the State, and within any reservation, to the United States. (State Statutes, 1850 to 1864, page 617.)

Certificates of purchase were not issued to the defendants until after the passage of said act, and the State, by the subsequent act of April 27, 1863, section 19 (*ibid.*, 613), provided that in case of any of the lands sold by the State proved to be within the boundaries of a grant, or otherwise not the property of the State, the holder or assignee of the certificate of purchase or patent should be entitled to receive in exchange therefor a certificate from the register of the State land office that such amount had been paid, which certificate should be received in payment for any other lands of the same class.

June 24, 1880, report was made recommending that the Attorney-General be requested to instruct the proper district attorney to move for a new trial in these cases, and, if necessary, to appeal to the Supreme Court of the United States.

Appeal was subsequently taken to the Supreme Court, which appeal was dismissed, on the authority of the Attorney-General, on the 8th of January, 1884, this office being wholly ignorant of this contemplated action.

Subsequently the State applied to have the lands certified to her, and this office, in report dated February 26, 1884, suggested whether the Department would not be justified in instructing the General Land Office not to certify these lands to the State, leaving the question to be further tested by mandamus, should the State desire to avail herself of that remedy. The list was, however, shortly afterwards certified as requested.

Thus ends the first chapter of the attempt to dispossess the settlers in Round Valley by proceedings in the courts.

Subsequently this office repeatedly asked for an appropriation to pay the balance of the claims, but without favorable result.

In the summer of 1884 a subcommittee of the Senate Committee on Indian Affairs visited the reservation, to investigate the "present and past management of said reservation, and of all abuses of the rights and interests of the Indians thereon."

During the last week of the session, February 27, 1885, the committee submitted its report (Senate Rep. No. 1522, 48th Cong., 2d sess.).

The committee found, what had been well known to this office for ten years, that some 97,000 acres of the 102,000 in the reservation, was oc-

cupied by trespassers, and that 44,000 sheep and 1,600 head of horses, cattle, and hogs were grazed upon the reservation by these men.

They also stated that the Government for the last twelve or thirteen years had been obliged to pay during that time for the support of the few Indians upon the reservation the sum of $241,975.93, an average of $20,165 per year, while the reservation contains land well calculated for the support of many more Indians than are to be found in the State of California.

The committee in their report say that the act of 1873 "provided for all such improvements as then existed upon the land put there by men who went there as settlers, and these should be paid for; but it furnishes no ground for the claim of other persons but those who were then the owners of improvements upon the land and their erecting new improvements or maintaining any possession of the land whatever while waiting for the United States to pay the original settlers for the improvements they then had. In the opinion of the committtee all persons except those who had actually erected improvements upon this land prior to that act are trespassers, and that those persons who were then occupants and have never been tendered the appraised value of their improvements can at most claim the occupancy of but 160 acres while waiting for the payment provided for in the act."

This had been the opinion of this office since 1873, but unfortunately the courts of the United States held a different opinion, and decided that one person might occupy 10,000 acres of land until a few corrals, shocks, and cabins had been appraised and paid for.

In conclusion the committee said:

> The present condition of things ought not longer to continue. If these occupants have any claim upon the Government growing out of the failure on its part to comply with the statute of 1873 it is quite time the matter was considered and every claim of that kind satisfied. (This office had been trying to have this done for ten years, but Congress had turned a deaf ear to its appeals.)
>
> The committee are of the opinion that the earliest measures should be taken to reduce the boundaries of this reservation to the present wants of the Indians. * * * A few thousand acres of valley land, with perhaps a small portion of upland for grazing purposes, is all that can be utilized for their benefit.
>
> To these needs the limits of the reservation should be reduced, and all Indians capable of taking care of themselves should be put upon a sufficient amount of this valley land, each in severalty, and in quantity sufficient for his support * * * The committee think that a commission should be appointed to appraise this land in quantities of not more than 640 acres, and that it should thereafter be sold at auction to the highest bidder above said appraisal, and the proceeds, after defraying the expenses of the sale and reduction, should be held by the United States in trust for these Indians, or such other Indians as justice and equity may require.
>
> The necessity of making some such disposition as this of the reservation is very pressing, and a longer continuance of the present state of things is a waste of large resources, and is suffering the Indians to drift away into useless as well as spasmodic efforts to sustain themselves, while the Government property is going to decay.

The committee submitted no measure to enable the Department to carry out its suggestions.

Under date of December 16, 1885, I had the honor to submit, for presentation to Congress, the draught of a bill, embodying in the main the suggestions contained in the committee's report, accompanied by a full statement of the facts and the necessity for legislation upon the subject. (See H. R. Ex. Doc. No. 21, Forty-ninth Congress, first session.) The bill passed the Senate, but failed in the House of Representatives.

After the final adjournment of the Forty-ninth Congress I determined to make one more effort to secure to the Round Valley Indians some portion at least of the 96,000 acres in the possession of white men, although I had but little hope that anything would be accomplished.

Accordingly, on the 2d of April, 1887, I recommended that authority be granted for the removal from the reservation of all parties found to be unlawfully thereon, and for the employment of the necessary military force. Authority was granted, and on the 25th of May last the agent was instructed to notify all parties unlawfully upon the reservation to remove therefrom, with all of their stock and personal effects, on or before the 1st day of August, 1887, and that in the event of their failure to remove their ejectment would be effected by a sufficient military force.

From this order there were excepted the persons and lands covered by the judgment of the United States circuit court rendered May 31, 1880, all persons occupying land the title to which had passed out of the United States, as shown by an abstract furnished by the General Land Office, and parties who had improvements within the reservation on the 3d of March, 1873, to whom payment or tender of payment had not been made. All of these parties were to be confined to the lands actually covered by the exception, and the latter class were to be confined to 160 acres each.

September 30, 1887, Agent Yates telegraphed that he was proceeding to eject settlers by military force as directed, when he was served with an order to show cause before the superior court of Sonoma County why he should not be restrained.

October 1, 1887, report was made recommending that the matter be referred to the Attorney-General, with request that the district attorney be instructed by telegraph to represent the interests of the United States in the case, and to use all proper efforts to defeat the contemplated injunction, which request was complied with by the Department of Justice, which Department had previously directed the institution of proceedings against parties upon Round Valley under section 2117, Revised Statutes, upon the request of the Department of the Interior.

October 27, 1887, General Howard telegraphed the War Deparment to the effect that Captain Shaw's company of artillery had been sent to evict trespassers on Round Valley; that an injunction had been served on him which he refused to obey, and that he refused to surrender, when an attachment was issued for him. General Howard asked for instructions.

October 28, 1887, the Secretary of War informed the Department of the Interior that the commanding general had been instructed to desist from declining to obey the writ until the question of jurisdiction should be determined by the Federal courts.

October 29, 1887, the Secretary of War inclosed a telegram from General Howard, asking whether he should leave Captain Shaw to be arrested and imprisoned at the call of the trespassers, who have no rights whatever, in obedience to the orders of the local courts, and also asking that he and Captain Shaw be sustained.

The Secretary of War requested advice as to what action was then needed to be taken by this Department.

November 4, 1887, report was made upon the foregoing facts, in which the following conclusion was reached:

In the present aspect of the case I do not see that any further action on the part of this Department is practicable, at least until the injunction has been dissolved, and I therefore have the honor to recommend that copies of the papers be submitted to the Attorney-General with the request that they be forwarded to the district attorney, with instructions to use every possible legal remedy to oust these parties and correct the extraordinary and disgraceful state of affairs at Round Valley, which has so long been a reproach upon all who are responsible for its continuance.

November 19, 1887, the Secretary of War transmitted a telegram from General Howard, stating that injunctions against Captain Shaw and himself had been transferred to the United States circuit court, and suggesting that as there was likely to be long delay before a decision would be had, the troops be withdrawn until next spring.

November 29, 1887, report was made that in view of the fact that the matter was pending in the United States courts, and that the agent had been instructed by the district attorney to stay all proceedings, it was not seen how the military could accomplish any good by remaining on the reservation.

Thus ends the second attempt to regain possession of the reservation by military force.

The second attempt through the courts seems likely to result in a similar failure.

In a report dated November 15, 1887, District Attorney Carey states that he has had the several cases removed from the local courts to the United States circuit court, and says:

I am fearful of the result of the cases in the circuit court, owing to the decision of that court in the case of the United States *vs.* Chas. H. Eberle, which was appealed to the Supreme Court of the United States and affirmed.

The case of Handy and Johnson will not come within the rule of the decision of the case above cited, because whatever rights they may have were acquired as purchasers subsequent to the act of Congress passed March 3, 1873; but as to the other plaintiffs, I am informed that they were settlers upon and had improved public lands brought within the reservation by the provisions of said act of Congress prior to the passage of that act. Should the decisions of the court be adverse to the Government in this effort of eviction, there is but one clear way out of the difficulty, and it ought to be speedily resorted to, and that is to make the necessary appropriation, have the improvements appraised, and the appraised value tendered therefor, as required by the provisions of the act hereinbefore cited.

The present condition of affairs, and that have existed so long, is a farce, and ought not to be tolerated longer.

Previous to the foregoing correspondence relative to the injunction proceedings, General O. O. Howard had, on the 14th of September, 1887, forwarded, through the War Department, a report on "the extraordinary and disgraceful state of affairs at the Round Valley Reservation," in which he reviewed the history of the reservation, the legislation in regard to it, the decisions of the courts, and the rights of the parties, and said:

These defendants and others, some of them without even the flimsy pretext of an assigned pre-emption or homestead claim, hold the whole or about 100,000 acres of grazing land. Certainly the court did not so intend, neither did the Supreme Court mean to aid and abet this iniquity. Feeble efforts have been made from time to time to restrict and expel these trespassers, but they have always resulted in a complete failure, and why? One of the chief claimants, himself not an original settler, but one by purchase [his interest was acquired by inheritance], is an ex-member of Congress, and wealthy, and he has to aid him shrewder counsel than the friends of the Indians have had.

Except three persons, none of the occupants actually reside upon the reservation.

Most of the intruders have grown rich, arrogant, and insolent in their high-handed encroachments upon the land set apart for the exclusive use and benefit of the Indians. Congressional legislation looking towards a settlement has been defeated in committee.

They want no settlement so long as they can have matters remain as they are, and why should they when such quasi-legal occupancy is vastly more remunerative than actual ownership? They graze annually some 30,000 head of sheep upon the reservation, besides several thousand head of horses, cattle, and hogs.

Their grazing land is stocked with all the animals it will maintain.

The agency cattle are driven off and the agency herder forbidden to "work" his cattle on their (?) ranges. The Government calves are boldly stolen and branded. One man has brazenly boasted to my aide-de-camp that he has stolen 12 calves a month from the agency, and this for years; *and yet he is* one of the smallest opera-

tors. * * * It is openly boasted that they have stolen the Government calves, raised and fattened them upon the reservation, and sold them to the Government to supply the Indians with beef. * * *

The iniquity perpetrated on this reservation is so glaring, so public, that it is demoralizing in its effects upon a large community.

It is imputed first to Congress, second to the courts, third to the Interior Department. * * * I recommend new legislation, and that in it some other method be taken to compensate claimants and intruders than by continuing them and their herds within the boundaries of the reservation.

This report is corroborative of statements made in a letter from C. H. Eberle dated September 18, 1887.

Mr. Eberle was one of the original settlers who obtained title to certain swamp lands and was paid for his improvements. He is not wholly free from the odium attaching to the early settlers in the valley, and for that reason his testing is the more valuable. He is no longer an occupant of lands within the reservation.

He refers to certain parties who, under a technicality of law, are permitted, and may be for years to come, to enjoy a valuable franchise or monopoly, and to pile riches upon wealth, consequent upon an entire exemption from taxation or money invested in the property used, simply because they have not been paid for a few paltry improvements scattered over a wide range of territory, and says:

The action of the Government is looked forward to with a great deal of interest, in regard to this whole matter. The Indian reservation in Round Valley has since its establishment been under the control of a corrupt ring of speculators, who have grown fabulously rich on the spoils. The Indian agents have been virtually *owned* by these men. * * * The plan of these parties has worked well thus far. They obtained title to the valley lands by the thousands of acres for a mere song. They have used nearly all of the reservation for fifteen years without a dollar's rent, and when a favorable opportunity offers, *the last act of a well-matured plan will be consummated* by getting an act passed by Congress similar to the act of March 3, 1873, curtailing the reservation to a few hundred acres, restoring the balance to the public domain, with the provision that occupants be permitted to enter 640 acres each as grazing lands at a nominal sum and, *as before, secure title to all* of their vast possessions by *fraudulent entries through the dummies in their employ.*

In the name of justice, in the name of thousands of worthy citizens who own no land, I emphatically and earnestly protest against the continuance of this gigantic monopoly of the Indian reservation by these parties. * * *

The action of President Cleveland and his Cabinet in regard to the wrongful occupation of the public domain and the Indian reservations is a guaranty that such abuses will be no longer tolerated, and that all wrongs will be righted when properly understood.

In a report dated October 7, 1887, District Attorney Carey refers to the injunction proceedings and says:

It is simply disgraceful that the condition of affairs at that reservation has not been broken up and stopped long ago. The authority of the Government is defied and the rights of the Indians absolutely ignored.

It is true there are complications about the matter, and legal impediments in the way of ejecting some of the trespassers, perhaps a number of them, and were they bonafide settlers who settled for the purpose, and with the view of purchasing the lands under the public land laws of the United States, it would be quite another matter; but the fact is, and well known and understood to be, that they had no other purpose in view than to usurp dominion over large tracts of public domain with the object of grazing their stock, and to maintain their dominion build a corral or cabin here and there.

The attempt of the act of March 3, 1873, to extend the boundaries of this reservation, has been absolutely defeated by the course of these intruders, and I am informed not only resulted in the trespassers continuing in possession, but they infringe upon the limits of the old reservation and commit frequent depredations by way of killing the stock belonging to the reservation, and branding and virtually stealing the larger per cent. of the increase from the reservation cattle.

Thus the struggle to secure the Indians in the possession of lands, some of which were set apart for their use in 1856, has gone on for

thirty years, with the results above depicted. The blame for the present condition of affairs has been cast upon this office and the Department, not only by the Senate committee but by others.

I submit, however, that a careful examination of the foregoing record will convince any disinterested person that this office, since the passage of the act of 1873, at least, has omitted no opportunity and left no means untried to rid the reservation of all white settlers not having absolute right and title therein.

The courts, however, have interfered and by surprising decisions have thwarted any attempts that gave promise of success.

Congress has failed to respond to repeated calls for necessary legislation, and the War Department has apparently been intimidated by county courts and sheriffs.

From District Attorney Carey's report, first referred to, it would seem that even the slow process of the courts will grant little, if any, relief.

The legislation of 1873 was most unfortunate, in that it permitted occupants of the reservation, whether with or without legal or equitable rights, to remain until their improvements had been appraised and paid for.

Under the decision of the courts these occupants had the right to determine whether their improvements had all been appraised, and the tender made must be kept good until the case had been determined in court, which ,under the Government system of accounting, is impracticable.

Without further legislation nothing will be accomplished, and the present "extraordinary and disgraceful state of affairs" will be continued for another generation.

The agent reports that already the trespassers have gathered new courage and are preparing to attack the reservation to its full extent, which will necessitate the feeding of all the agency herd and horses through the winter or allowing them to starve.

As he had only about one-tenth enough feed, it is probable that the latter result will ensue.

The temptation to these men to continue their occupation and to others to follow their example is great.

Enough money to build a cabin and buy a branding-iron appears to be all the capital necessary to enable an occupant of the reservation to become wealthy.

The wonderful fecundity of the stock of these occupants has been a subject of remark by special agents and others. It is not uncommon for their ewes and cows to drop duplicates and triplicates, while large numbers of the agency stock are barren.

It is for the interests of these men to defeat all legislation looking to the payment of their paltry improvements, originally valued at some $32,000, of which sum $21,000 has been paid, while the occupancy of the reservation is estimated by an intelligent witness before the Senate committee to be worth $34,125 per annum.

Whatever may be the result of the suits now pending, it is clear that the occupants of the lands covered by the former judgment of the court can not be dispossessed until they have been paid for all of their improvements, and that any successful attempt to eject the occupants of other lands will result in the first parties increasing their holdings and themselves occupying all the reservation.

I have therefore prepared the draught of a bill, intended to accomplish the end sought for unsuccessfully during the last fifteen years.

I desire that this bill may have the careful and earnest consideration

of the committees of both houses of Congress, and that if they are able to discover any loop-hole of escape for the trespassers they will devise such bill or amendment as will make the legislation more swift and sure in accomplishing the object designed.

The bill prepared is similar to that presented to the last Congress, the first section being modified so as to adapt it to the provisions of the severalty act.

I inclose two copies each of the following papers:

General Howard's report, District Attorney Carey's report, Mr. Eberle's letter, draught of bill, and this report.

Very respectfully, your obedient servant,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

A BILL to provide for the reduction of the Round Valley Indian Reservation, in the State of California, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the President of the United States be, and he hereby is, authorized and directed to cause the agricultural lands in the Round Valley Indian Reservation, in the State of California, to be surveyed into 10-acre tracts, and to allot the same in severalty to the Indians belonging thereon, under the provisions of the act of Congress approved February 8, 1887, entitled "An act to provide for the allotment of lands in severalty to Indians on the various reservations, and to extend the protection of the laws of the United States and the Territories over the Indians, and for other purposes:" *Provided,* That he may cause said agricultural lands to be allotted in such quantities and to such classes as he may deem expedient and for the best interests of said Indians: *And provided further,* That a sufficient quantity of said agricultural lands shall be reserved for agency, school, and mission purposes.

In addition to the allotments of agricultural lands to said Indians in severalty, there shall be reserved a reasonable amount of grazing and timber lands for their use, to be used by said Indians in common, or the President may at any time, in his discretion, cause the same to be allotted in severalty under the provisions of said act of February 8, 1887. Said grazing and timber lands shall be selected by a commission of three disinterested persons, to be selected by the President.

SEC. 2. That said commission shall appraise the value of any and all tracts of agricultural lands within the Round Valley Indian Reservation, with the improvements thereon, which have become the property of individuals by purchase from the State of California or from persons deriving title from said State, and shall also appraise the value of all improvements made by private persons or firms before the 3d day of March, 1873, upon any of the lands included in the reservation as established under the act of Congress approved March 3, 1873, other than those actually disposed of by said State of California, and within the lands selected and retained for the Indians under the provisions of this act, and shall report the same to the Secretary of the Interior, who shall cause payment to be made for such appraised lands and the improvements thereon, and also for such improvements as may be located upon the lands selected for the Indians in common, or upon any of the unappraised agricultural lands within the reservation as hereby established, to the proper owners thereof, out of the money hereinafter appropriated. Upon payment of the appraised value of such appraised lands and improvements, or upon tender of payment, the title to said lands shall become vested in the United States, and all persons to whom such payment or tender of payment shall be made, and all persons claiming through or under them, shall immediately remove from the reservation as herein established, and upon failure to remove within a period of sixty days after said payment or tender of payment the military forces of the United States, if necessary, may be employed to effect their removal.

SEC. 3. That the remainder of the grazing and timber lands included in the reservation as at present existing shall be surveyed in to tracts of 640 acres each, and the boundary lines of the reserved lands shall be run and properly marked. Upon the completion of said surveys, the said remainder of the grazing and timber lands shall be appraised in tracts of 640 acres each, by a commission of three disinterested persons to be appointed by the President, which commission shall also appraise all im-

provements placed upon said tracts before the 3d day of March, 1873, and determine the ownership thereof. The said appraisements shall be subject to approval by the Secretary of the Interior.

The said lands, when surveyed and appraised, shall be sold at the proper land office of the United States, by the register thereof, at public sale, after due notice, to the highest bidder, at a price not less than the appraised value, and not less than $1.25 per acre. Each purchaser at such sale shall pay the full purchase price at time of purchase.

Any person or persons having appraised improvements upon any of said tracts shall have preference right to purchase the tract or tracts upon which said improvements are located at the appraised value thereof. Upon failure of any such person or persons to purchase a tract upon which his or their improvements are located, said tract and improvements shall be sold at not less than the appraised value, and an amount equal to the appraised value of the improvements shall be paid to the owner or owners of such improvements.

SEC. 4. That the funds arising from the sale of said reservation lands, after paying the expenses of survey, appraisement, and sale, and reimbursing the United States for payment of lands and improvements, as provided in section 2 of this act, shall be placed in the Treasury of the United States to the credit of said Indians, and the same shall draw such rate of interest as is now or may be hereafter provided by law, which income shall be annually expended for the benefit of said Indians, under the direction of the Secretary of the Interior: *Provided*, That an amount not exceeding one-tenth of the principal sum may be also expended for their benefit during any fiscal year, if deemed necessary by the Secretary of the Interior.

SEC. 5. That the sum of $25,000, or so much thereof as may be necessary, be, and the same hereby is, appropriated, out of any money in the Treasury not otherwise appropriated, for the payment of the expenses of the survey, appraisement, and sale of said lands, and for the appraisement of lands and improvements and payment of the same.

SEC. 6. That all acts and parts of acts inconsistent with the provisions of this act are hereby repealed.

DEPARTMENT OF THE INTERIOR,
Washington, July 29, 1887.

SIR: I have the honor to inclose herewith copies of certain correspondence relating to intruders upon the Round Valley Indian Reservation in California, and showing the action taken by this Department to secure their removal, and to restrict those having rights to lands within the boundaries of the reservation to the limits of the quantity of land to which their claims attach under the laws and decisions of the courts on the subject.

It appears that the few parties holding claims to land within the reservation, together with the intruders who have no right thereon, are occupying some 97,000 acres of this reservation of 103,000 acres.

The accompanying papers show the action taken by this Department to remove the intruders from the reservation and preserve the land for the use and occupation of the Indians; also, the difficulties likely to be encountered in the attempt to accomplish this purpose.

As a further measure for enforcing the general laws on the subject, and also the regulations of this Department relating to this reservation, I have the honor to request that the proper United States district attorney be instructed to institute proceedings under section 2117 of the Revised Statutes of the United States against any and all persons guilty of violation of the provisions thereof in connection with the lands of the said reservation by driving or otherwise conveying any stock of horses, mules, or cattle to range or feed thereon.

These Indians are reported to be in condition to take their lands in severalty, and it is the earnest desire of this Department that all obstacles and embarrassments in the way of the application of the provisions of the general allotment act on this reservation may be speedily removed.

It is believed that the measures herein suggested, together with the further action of the Department in the matter, if vigorously prosecuted, will result in the clearing of the reservation of intruders and their cattle, and maintain it for the undisturbed use and occupancy of the Indians residing thereon; and to this end I earnestly request the co-operation of your Department.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The ATTORNEY-GENERAL.

DEPARTMENT OF THE INTERIOR,
Washington, July 29, 1887.

SIR: I have the honor to acknowledge the receipt of your letter of 28th ultimo, with inclosure from the commanding general of the Department of California, in reply to letter of this Department of 5th of April last, upon the subject of the removal of intruders from the Round Valley Indian Reservation in California, wherein you invite attention to the report of General Howard upon the subject, who states that there are but two intruders upon the reservation in addition to certain parties excepted by a judgment of the United States circuit court, and to his suggestion, that if this Department decides to expel occupants from the reservation or restrict them to small limits, that an inspector in the confidence of the Department, with full powers, be sent to Round Valley, to remain there till the work be accomplished.

In reply, I inclose herewith copy of a letter of 23d instant from the Commissioner of Indian Affairs, to whom the correspondence was referred, who incloses a copy of the instructions issued to the United States Indian agent of the Round Valley Agency concerning the removal of the intruders from said reservation.

As these instructions are very full and explicit, it appears that the agent is well informed as to the scope and character of the duty to be performed by him, as to who are to be considered as intruders, and to be removed as such, it does not appear to this Department that the presence of an inspector would be of any special service or advantage in this case, if one could be spared at this time for such service.

In view of the possibility that the agent, with the aid of the small military force which was requested in Department letter of 5th April last to remain upon the reservation for a reasonable time, may not be able to keep off the intruders with their cattle, and to restrict those parties holding claims to land within the boundaries of the reservation to the limit of the quantity to which they may be entitled under the laws and decisions relating thereto, the Department of Justice has been this day requested to direct the proper United States district attorney to institute proceedings under section 2117 of the Revised Statutes of the United States to recover the penalty prescribed thereunder against all persons who are found driving or otherwise conveying any stock of horses, mules, or cattle to range and feed upon the lands of this reservation without the consent of the Indians.

It is believed that these measures, if vigorously prosecuted, will result in clearing the reservation of the intruders and their cattle, and maintain it for the undisturbed use and occupation of the Indians residing thereon. These Indians are reported to be in condition to take their land in severalty, and it is the earnest desire of this Department that all obstacles and embarrassments in the way of the application of the provisions of the general allotment act on this reservation may be speedily removed.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF WAR.

HEADQUARTERS DEPARTMENT OF CALIFORNIA,
San Francisco, Cal., September 14, 1887.

SIR: The extraordinary and disgraceful state of affairs at the Round Valley Indian Reservation, in my judgment, calls for a special report.

To make the subject clear, it will be necessary briefly to review their history. From 1858 to 1870, the reserve existed informally by an order of the Secretary of the Interior, comprising Round Valley proper, a fertile tract of some 20,000 acres.

March 30, 1870, the entire valley was set apart by a formal order of President Grant; but, prior to this order, a large part of the reservation was already occupied by white settlers and intruders. Three years later, March 3, 1873, by act of Congress, nine-tenths of the valley was opened to settlement, and the boundaries of the reservation so changed as to include within its limits about a hundred thousand acres of mountain land fit only for grazing. This last increase inclosed the improvements of sheepmen, that is to say, their fences, corrals, shanties, and some few acres of tillable land. By the same act of Congress a commission was instituted to appraise the improvements, viz, those of Indians south of the boundary line and those of whites to the north which were included in the new limits.

The act also provided for the payment of the appraised value of the improvements from the the proceeds of sales of land restored to settlement. It was further provided "that all settlers now residing upon the tract herein described, lying north of the south boundary of the said reservation, shall be required to remove therefrom as soon as they shall be paid for, or tendered the amount of the appraised value of their improvements." It is plain that none of these settlers at the time of the passage of the act could have had legal claim to more than 160 acres of land each, and to such improvements as they had already made upon said tract. Yet a liberal construction of the act

has given them the value of improvements on much in excess of those upon the 160 acres. Appraisement was made and in some cases payment tendered and accepted; in others, refused on plea that all the improvements were not appraised. In other cases the appraisements were satisfactory, but no payment has ever been tendered. The claimants were originally twenty-eight in number, and the value of their improvements as appraised by the commission was $32,519.78. The amount available from the sales of land for the payment of these claims was not sufficient to pay all the claimants, so that the improvements of fourteen of them, amounting to $10,879.78, have never been paid for, nor has payment therefor been tendered. Hence the complications and glaring abuses which to the disgrace of humanity exist now, and have existed for years upon this reservation. These claims are now held by some nine parties, only four of whom are original settlers, the others holding by assignment. As the Government does not recognize the assignment of a homestead or pre-emption claim and never did, it follows that there are at present only four legal claims, and those to 160 acres. By the very broadest interpretation of the law and the act in question, these should be restricted to the land inclosed by the improvements (fences) as they existed March 3, 1873. These inclosures were then and are now insignificant in extent, although most of the fencing has been done since the passage of the act. The entire area wholly inclosed by encing by these people to-day does not exceed 2,000 acres, *i. e.*, the whole of the grazing land. Therefore it is hard to see just by what process of reasoning a United States circuit court could give undisputed possession to at least half of the grazing land of the reservation to the three defendants. (See judgment of the United States circuit court, page 195, Senate Report No. 1522, Forty-eighth Congress, second session.)

These defendants and others, some of them without even the flimsy pretext of an assigned pre-emption or homestead claim, hold the whole or about 100,000 acres of grazing land. Certainly the court did not so intend, neither did the Supreme Court mean to aid and abet this iniquity. Feeble efforts have been made from time to time to restrict and expel these trespassers, but they have always resulted in a complete failure, and why? One of the chief claimants, himself not an original settler, but one by purchase, is an ex-member of Congress, and wealthy, and he has had to aid him shrewder counsel than the friends of the Indians have had. Except three persons, none of the occupants actually reside upon the reservation. Most of these intruders have grown rich, arrogant, and insolent, in their high-handed encroachments upon the lands set apart for the exclusive use and benefit of the Indians. Congressional legislation looking toward a settlement has been defeated in committee. They want no settlement so long as they can have matters remain as they are, and why should they when such quasi legal occupancy is vastly more remunerative than actual ownership. They graze annually some 30,000 head of sheep upon the reservation, besides several thousand head of horses, cattle, and hogs. Their grazing land is stocked with all the animals it will maintain. The agency cattle are driven off and the agency herder forbidden to "work" his cattle on their (?) ranges. The Government calves are boldly stolen and branded. One man has brazenly boasted to my aide-de-camp that he has stolen 12 calves a month from the agency, and this for years; and yet he is one of the smallest operators. Such has been the thieving of some of these men that, although the agency herd of cattle has numbered 500 to 700 head, mostly she cattle, the agency has heretofore barely secured 100 head of the increase yearly.

It is openly boasted of that they have stolen the Government calves, raised and fattened them upon the reservation, and sold them to the Government to supply the Indians with beef. The recent order from the Interior Department protects a part of the stockmen and gives them practically half of the reservation. The others concerned are indignant, and ask, "will the United States troops protect these men in their occupancy?" These declare that they will move their herds to that side of the reservation which is not to be cleared. There are no natural barriers between the princely possessions of those exempted under the order and those less favored, and the fences, most of which have been erected since 1873, are not arranged so as to effect such a separation. As a matter of fact, all stock upon the reservation intermingle. It follows that after the reservation is cleared of stock belonging to those who are deemed unlawfully upon it, it would only have the effect of allowing those remaining to double or treble their herds, which they will undoubtedly do. Matters would then be as bad for the Indians as before. It would take a hundred mounted men patrolling day and night to restrict those exempted to the boundaries which were erroneously, I think, set forth in the judgment of the court. The judge must have been deceived as to the enormous amount of land covered in his decision.

The iniquity perpetrated on this reservation is so glaring, so public, that it is demoralizing in its effects upon a large community. It is imputed, first, to Congress; second, to the courts; third, to the Interior Department. Now of course the military arm is called in and forced in spite of itself to continue the crime.

A Congressional committee's report, February 27, 1885, contains the facts. An inspector of the Interior Department, General Heth, in a report dated February 9, 1887,

has again set forth the manner in which the Government and the Indians have been robbed and outraged.

I recommend new legislation, and that in it some other method be taken to compensate claimants and intruders than by continuing them and their herds within the boundaries of the reservation.

Very respectfully, your obedient servant,

O. O. HOWARD,
Major-General, Commanding.

The ADJUTANT-GENERAL OF THE ARMY,
Washington, D. C.

SANTA CRUZ, CAL., *September* 18, 1887.

DEAR SIR: I learn from the San Francisco papers that the United States troops are now on their way to execute an order for the removal of settlers on the Round Valley Indian Reservation in this State, and that several of the parties thereon will be permitted to remain with their stock, among whom are the Henley Brothers and Gibson.

On the mere technicality of law these men have since the passage of the act of Congress of March 3, 1873, occupied about 28,000 acres of the finest grazing, farming, fruit, and vine land in this State, a principality enjoyed under the protection of the Government, a monopoly shielded from the intrusion or molestation of all others by the Government.

The United States circuit court in the case of The United States *vs.* Eberle *et al.* decided (see Senator Dawes' Senate Report No. 1522, Forty-eighth Congress, second session, page 193) "that the plaintiff is not entitled under said act to recover of said defendants the possession of said lands so described in the respective answers of said defendants (Henley Brothers and Gibson)."

The fraudulent entry (see page 160 of said report) of a large tract of the restored reservation lands by G. W. Henley, at the nominal sum of $1.25 per acre, worth at the time of his entry from $40 to $50 per acre, deprived the Government of the money that ought to and would have paid every settler entitled to receive compensation then on the reservation. It was never intended by those who engineered the bill through Congress, Col. Thomas J. Henley, father of the Henley Brothers, and others who are now enjoying this monopoly, that their improvements should be paid for by the Government; and as they planned it, so it has been. They still retain possession, and, if the papers speak authoritatively, they will continue so to do for years to come.

The technicality of law which is here referred to is that, not being paid for a few improvements in the shape of poorly-constructed sheep corrals and delapidated cabins, scattered over a wide range of territory, they are, have been, and may possibly be for years to come, permitted to enjoy this valuable franchise, or monopoly, and continue to pile riches upon wealth, consequent upon an entire exemption from taxation or money investment in the property so used.

If they are permitted to remain until their improvements are paid for, their occupation of lands until that time should be restricted to the use of 160 acres, and no more. Other citizens have no greater privileges. Why, then, should they have the use of so many thousands of acres?

The action of the Government is looked forward to with a great deal of interest in regard to this whole matter. The Indian reservation in Round Valley has, since its establishment, been under the control of a corrupt ring of speculators, who have grown fabulously rich on the spoils. The Indian agents have been virtually owned by these men. These men have been the official bondsmen of the agents, and the agents have been compelled to do their bidding.

I know these things. I (until recently) have been a resident of Round Valley from its earliest settlement, and know whereof I speak.

The plan of these parties has worked well thus far. They obtained titles to the valley lands by the thousands of acres for a mere song. They have used nearly all of the reservation for fifteen years without a dollar's rent, and, when a favorable opportunity offers, the last act of a well-matured plan will be consummated by getting an act passed by Congress similar to the act of Congress of March 3, 1873, curtailing the reservation to a few hundred acres, restoring the balance to the public domain, with the provision that occupants be permitted to enter 640 acres, each, as grazing lands, at a nominal sum, and, as before, secure title to all of their vast possessions by fraudulent entries through the dummies in their employ.

In the name of justice, in the name of the thousands of worthy citizens who own no land, I emphatically and earnestly protest against the continuance of this gigantic monopoly of the Indian reservation by these parties.

Henley Brothers & Gibson have no right upon the Round Valley Reservation.

They have no right to the land fraudulently entered by them on the restored domain, of every acre of which, so entered, the patent should be canceled and the land resold for the benefit of the Indian service, as contemplated by law. The report of Special Agent Wilson T. Smith furnishes abundant proof for procedure.

The Asbill Brothers are entitled to some consideration. They were wholly outside of the reservation at the time of its extension.

Philo Handy is an intruder and trespasser, entitled to no consideration whatever. When my sheep were driven off during the litigation by Indian Agent Sheldon, assisted by Handy, an employé on the reservation at the time, said Handy was permitted and did drive immediatley upon the range occupied by me on the reservation a band of sheep of his own. And he has occupied the same until now.

Bourne & Bermudas, now residing on the reservation, were permitted by Agent Sheldon to enter the premises and take possession of the improvements surrendered by me to the Government, for which I received pay, and they have continued to occupy the same until now without compensation to the Government.

Bourne & Johnson are not entitled to occupy any portion of the reservation.

Joseph Rea is also an intruder, having entered upon the reservation quite recently.

David Johnson, in collusion with Agent Sheldon, was permitted to drive sheep upon the reservation long after its boundary extension.

I am familiar with every foot of the reservation lands; it is all rich and productive land.

The amount not susceptible to cultivation is very small; the greater part is open land, ready for the plow, very rich, with plenty of timber in the ravines, not as steep as are thousands of acres in cultivation in other parts of this State, with abundance of water, and adapted to the profitable production of all kinds of grain, fruits, vines, and vegetables. Such lands in this county bring readily from $50 to $100 per acre.

Such is the character of the lands that are now being monopolized by the thousands of acres by the ring, and from which every one of them should be driven with their stock immediately.

This communication is made solely to call your attention to the fact that, while it is presumed that all citizens are entitled to equal privileges and rights on the Government domain and upon the Indian reservation, also a few men with the aid and in business connection with men in high official positions—for instance, the Hon. Barclay Henley, a member of Congress from this State—are and have been permitted to grow immediately wealthy by the usurpation of the property of the Government, and, through their power and influential positions, defy even the Government itself to dislodge them.

This has been amply manifested in the past by the success of the elder Henley, the Hon. Thomas J., and succeeded by the son, the Hon. Barclay Henley. These men have used the Department of Indian Affairs for years as a cat's paw for their private aggrandizement, and through postponements, delays, rehearings, and new committees have managed to maintain their possession of the reservation until now.

The action of President Cleveland and his Cabinet in regard to the wrongful occupation of the public domain and the Indian reservations is a guarantee that such abuses will be no longer tolerated, and that all wrongs will be righted when properly understood.

For this purpose this communication is earnestly submitted.

Respectfully yours

C. H. EBERLE.

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
Washington, October 3, 1887.

SIR: I have the honor to inclose herewith copy of a letter of 1st instant, from the Commissioner of Indian Affairs, with inclosed copy of telegram noted therein, received from United States Indian Agent Yates, of Round Valley Agency, California, to the effect that he has been served with an order to appear before the supreme court of Sonoma County, Cal., on 10th instant, and show cause why he should not be restrained from removing certain intruders from Round Valley Reservation under orders from this Department.

Concurring in the recommendation set forth in the letter of the Commissioner of Indian Affairs, I respectfully recommend that the proper United States district attorney be instructed by telegraph to represent the interests of the United States in this case, and use all proper efforts to defeat the contemplated injunction.

The Commissioner reports that the agent will be instructed to confer with the district attorney upon the subject.

In this connection attention is respectfully invited to letter of this Department, of 20th July last, requesting the institution of proceedings against parties upon the Round Valley Reservation, under section 2117, Revised Statutes, and to the action taken by the Department of Justice thereunder.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The ATTORNEY-GENERAL.

DEPARTMENT OF THE INTERIOR,
Washington, November 5, 1887.

SIR: I have the honor to inclose herewith copy of a letter of 4th instant from the Commissioner of Indian Affairs, with accompanying copies of papers noted therein, upon the subject of intruders in the Round Valley Indian Reservation in California, the removal of whom has been enjoined by the superior court of Sonoma County, Cal.

The Commissioner, in forwarding the inclosed papers, observes that, "in the present aspect of the case," he does not see that any further action on the part of this Department is practicable, at least until the injunction shall have been dissolved.

Concurring in the recommendation set forth in his letter, I respectfully request that the inclosed papers may be forwarded to the proper United States district attorney, with instructions to use every possible legal remedy to effect the removal of the parties (before requested) "and correct 'the extraordinary and disgraceful state of affairs' at Round Valley, which has so long been a reproach upon all who are responsible for its continuance."

I have the honor to be, very respectfully,

D. L. HAWKINS,
Acting Secretary.

The ATTORNEY-GENERAL.

SAN FRANCISCO, *November* 15, 1887.

SIR: I have the honor to acknowledge the receipt of your letter of the 8th instant, initials "N. T. N. R," file number 1437, 1884, together with its inclosures relative to intruders upon the Round Valley Indian Reservation in this State. Mr. Yates, the Indian agent at said reservation, in pursuance of orders issued from his Department, aided by a military force furnished by General Howard under orders from the Department of War on the request of the Secretary of the Interior, was proceeding to evict the intruders not excepted in a letter from the Commissioner of Indian Affairs bearing date May 2, 1887, when two of them, viz, Philo Handy and D. T. Johnson, sued out a writ of injunction in the superior court of Sonoma County, this State. This suit was instituted against Yates, the agent, alone. I advised Yates to desist from further action until the jurisdiction of the court could be judicially determined and the answer to the rule to show cause why the injunction should not be made perpetual could be heard. He followed this counsel and directed the military commander in charge of the military force assisting him, the writ running against the agent, his agents and employés, but the commander, Captain Shaw, declined to obey him and continued in the work of ejecting intruders. Thereupon, the same parties, Philo Handy and D. T. Johnson, and a number of other intruders directed to be ejected, brought suit in the superior court of Mendocino County against General O. O. Howard and Capt. R. G. Shaw, immediately in command of the military force on the reservation. The sheriff served the process upon Shaw, and he declined to obey and informed the sheriff he would make respectful return to the writ, but should continue the eviction in obedience to the orders of the superior officer. He did so continue the eviction, and upon a showing made, a warrant of arrest was issued for him. The sheriff proceeded to make service of the warrant, whereupon Captain Shaw resisted and declined to surrender. The sheriff returned to the county seat and there telegraphed to me the facts and said he would raise a posse and take Captain Shaw, and requested me to advise General Howard to order Captain Shaw to desist and surrender until the matter could be heard in court. I thereupon advised General Howard to desist and to direct Captain Shaw to make return to the court denying its jurisdiction in the premises, and submit to a judicial determination of the questions involved. This he declined to do without orders to that effect from the Department of War, which was the occasion of my telegram to you under date of 27th ultimo. In the first case mentioned, that pending in Sonoma County, I at once took proper steps to remove the whole matter to our circuit court and succeeded in doing so, but have not been able to bring the matter on to hearing at the present time. I also took the proper

steps to remove the cases commenced in Mendocino County to the circuit court and succeeded in staying all proceedings in the State court, and at once ordered a transcript of the record to be sent to be entered and filed in our United States circuit court. The record in these cases has not yet been filed, not yet having been received. As soon as I have gotten all the cases in the circuit court, I shall bring the matter on for speedy hearing. The transfer of the cases from Mendocino County I contended, and the court finally concluded, carried with it the contempt proceedings against Captain Shaw; so that the whole matter will be submitted to and determined by our United States circuit court. I am satisfied the temperament of the State courts, for reasons that I need not state, is adverse to the proceedings, and again, I am fearful of the result of the cases in the circuit court, owing to the decision of that court in the case of The United States vs. Chas. H. Eberlee, which was appealed to the Supreme Court of the United States and affirmed. The case of Handy and Johnson will not come within the rule of the decision of the case above cited, because whatever rights they may have were acquired as purchasers subsequent to the act of Congress passed March 3, 1873; but as to the other plaintiffs, I am informed that they were settlers upon and had improved public lands brought within the reservation by the provisions of said act of Congress prior to the passage of that act. Should the decisions of the court be adverse to the Government in this effort of eviction, there is but one clear way out of the difficulty, and it ought to be speedily resorted to; and that is, to make the necessary appropriation, have the improvements appraised, and the appraised value tendered therefor as required by the provisions of the act hereinbefore cited. The present condition of affairs, and that have existed so long, is a farce and ought not to be tolerated longer. I will use my utmost endeavors to secure a favorable decision and this with every dispatch consistent with other official duty and the business of the court. It may not be out of place to state that General Howard has received orders, the exact nature of which, I am informed, but they had the effect to prevent a collision between the civil authorities and the military, and further proceedings by the military have been temporarily suspended; but the troops have not been withdrawn and will not be, as I am informed, until after a final determination of the matter in court. I will report further progress.

Very respectfully, yours,

JOHN T. CAREY,
United States Attorney.

The ATTORNEY-GENERAL,
Washington, D. C.

DEPARTMENT OF THE INTERIOR,
Washington, November 30, 1887.

SIR: I have the honor to acknowledge the receipt of your letter of the 19th instant, inclosing copy of a telegram from the commanding general of the Division of the Pacific, suggesting, for reasons stated, that the United States troops in Round Valley be withdrawn until next spring, with recommendation from the Lieutenant-General for favorable action upon the suggestion of General Howard, concerning which you request to be favored with the views of this Department upon the subject.

I also acknowledge the receipt of your Department letter of 26th instant, referring to the previous correspondence upon the subject, and requesting to be favored with an early reply.

The letter of the 19th instant having been referred to the Commissioner of Indian Affairs, I have the honor to inclose herewith copy of his reply of 28th instant, with accompanying copy of letter of 3d instant from Agent Yates, of Round Valley Agency, noted therein, concerning action taken for the removal of intruders from the Round Valley Reservation, and the results flowing from the injunction obtained in the courts.

The Commissioner expresses the opinion that, "in view of the fact that the matter is now pending in the United States court, and that the agent has been instructed by the district attorney to stay all proceedings, he does not see that the military can accomplish any good by remaining longer on the reservation."

The views of the Commissioner have the concurrence of the Department, and I therefore recommend, for the reasons given, that the troops be not required to remain longer on the reservation at this time.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF WAR.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 34.

INDIAN DEPREDATION CLAIMS.

LETTER

FROM

THE ACTING SECRETARY OF THE INTERIOR,

TRANSMITTING,

With a letter from Commissioner of Indian Affairs, a schedule of Indian depredation claims examined and determined from January 5, 1887, to January 1, 1888, together with the papers in each case.

JANUARY 9, 1888.—Referred to the Committee on Indian Depredation Claims and ordered to be printed.

DEPARTMENT OF THE INTERIOR,
Washington, January 5, 1888.

SIR: In compliance with request contained in the act of March 2, 1887 (24 Stat., 464), making appropriation for the Indian service for the fiscal year ending June 30, 1888, I have the honor to transmit herewith a schedule of Indian depredation claims, numbering 433, whose examination was completed on January 1, 1888, together with the papers in each of the claims and the determination of the Department in each of the respective cases.

These claims comprise those finally considered and determined since the date of the report of January 5, 1887, submitting a prior schedule of such claims, numbering 305, which will be found printed in House Ex. Doc. No. 77, Forty-ninth Congress, second session.

The letter of the Commissioner of Indian Affairs, dated the 2d instant, to this Department on this subject is also inclosed.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., January 2, 1888.

SIR: I have the honor, in compliance with the provisions of an act entitled "An act making appropriations for the current and contingent expenses of the Indian Department, etc., for the year ending June 30, 1888" (24 Stat., p. 464), to transmit herewith a schedule of Indian dep-

redation claims, in favor of citizens of the United States, and against Indians holding treaty relations with the Government, whose investigations in pursuance of said act were completed on the 1st instant.

Said schedule contains the numbers of the claims, name, and post-office address of each claimant, character of the property stolen or destroyed, the Indians charged with the depredation, when committed, date of presentation, amount claimed, amount allowed, date of action, whether barred, and the "date and clause of the treaty creating the obligation for payment, and also what funds now existing by reason of treaty or other obligation out of which the same should be paid."

Each claim herewith is accompanied by the original testimony, former action had, post-office address of the witnesses, together with a letter, with full abstracts of the whole record in the case, embodying "my opinions and conclusions upon all material facts, and all the evidence and papers pertaining thereto."

Very respectfully,

J. D. C. ATKINS,
Commissioner.

To the Honorable SECRETARY OF INTERIOR.

INDIAN DEPREDATION CLAIMS.

A list of depredation claims in favor of citizens of the United States against Indians in treaty

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
2077	Aguerre, Pedro, Dona Ana County, N. Mex.	Cattle	Gila Apache	Dec., 1852	Dec., 1854
692	Alarid, Gaspar O. y, Santa Fé County, N. Mex.	Horses, mules, etc.	Navajo	July 1, 1866	Mar., 1869
1324	Aldrich, Frank, Bon Homme County, Dak.	Cattle	Brulé Sioux	Sept., 1873	Mar., 1874
153	Allen, John R., Morris County, Kans.	Corn	Kaw	Oct., 1861	Mar., 1864
1512	Allen, James L., Laramie County, Colo.	Horses	Sioux	Dec., 1868	Jan., 1875
1328	Allen, L. A., Bent County, Colo.	....do	Arapahoe	Sept., 1873	Apr., 1874
2089	Ames, D. F., Cedar County, Nebr.	....do	Yankton Sioux	Apr., 1860	Dec., 1860
2060	Aragon, Jose Francisco, Bernalillo County, N. Mex.	....do	Navajo	Nov., 1852	Mar., 1855
1773	*Armijo, José, Laramie County, Wyo.	Mules and horses.	Sioux	Dec., 1869 Jan., 1870	In 1878
1772	Armijo, Joseph, Laramie County, Wyo.	Horses	Arapaho	Oct., 1868	July, 1878
493	Armijo, Joseph, Fort Laramie, Dak.	....do	Sioux	Mar., 1865	July, 1866
1914	Avery, Morgan L., Star Prairie, Saint Croix County, Wis.	Dwelling, hay, etc.	....do	1856	Nov., 1856
1406	*Baca, Antonio Cabeza de, San Miguel County, N. Mex.	Horses	Navajo	Aug. 15, '64	Sept. 21, '74
1476	Baca, Pascual, San Miguel County, N. Mex.	Cattle	....do	Dec. 24, '63	Dec. 30, '74
1454	*Baca, Vicente, San Miguel County, N. Mex.	....do	....do	Feb. 18, '63	Dec. 9, '74
664	Bacon, David G., and Mary J., Lincoln County, Kans.	Clothing, etc., and personal injuries to Mrs. B.	Cheyenne, Arapahoe, and Sioux.	Aug., 1868	Jan., 1869
2626	Baggs, George, Sweet Water County, Wyo.	Horses	Ute	Oct. 6, '79	Nov. 23, '80
999	Baker, J. H., Palo Pinto County, Tex.	Horses and cattle.	Kiowa	July 9, '70	1871
342	Baker, William, Livingston, Mont.	Clothing, etc	Cheyenne and Sioux.	Aug. 8, '64	Dec. 15, '65
1649	Barker, F. V., Yakama City, Wash.	Cash, clothing, etc.	Yakama	Aug. and Dec. '75	June, 1876
2123	Barker, John M., Douglas County, Oregon.	Horse	Umpqua	July, 1857	Mar., 1858
2825	*Barry, Mrs. Joanna, Washington, D. C.	Clothing, etc	Apache	Feb., 1870	Feb. 11, '82
3244	Barton, Orvilla A., Ridge, Oregon.	Pictures, etc., destroyed.	Bannock or Snake.	July, 1878	July 9, '84
2120	Barton, William, Douglas County, Oregon.	Dwelling house	Rogue River and Cow Creek.	Oct., 1855	Mar., 1858
1763	Battleyoun, Isaac, Laramie County, Wyo.	Horses and mules.	Sioux	1867, '68, '69, '71.	June, 1878
2115	Beamon, R. H., Douglas County, Oregon.	Horse, etc	Rogue River, etc.	1855	1857

*Barred.

with the Government which have been investigated in pursuance of act of May 15, 1886.—

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$640.00	.....	$640.00	Mar. 29	Treaty of July 1, 1852, 10 Stats., 979.	No treaty fund.
4,130.00	$2,380.00	.....	Dec. 16	Treaty of Sept. 9, 1849, 9 Stat., 974, art. 2.	Do.
935.00	510.00	.....	Jan. 15	Treaty of Feb. 24, 1869, art. 1, 15 Stats., 635.	Eleven installments of $130,000 each, as per treaty, 15 Stats., 635.
250.00	.....	250.00	Sept. 10	Treaty of Nov. 17, 1860, 12 Stats., 1111.	Pro rata interest on $200,000, as per treaty of 1846, Stats., 9, 842.
570.00	285.00	.....	Mar. 28	Treaty of Apr. 29, 1868, art. 1, 15 Stats., 635.	Eleven installments of $130,000 each, as per treaty, 15 Stats., 635.
320.00	.....	320.00	Jan. 20	Treaty of Oct. 28, 1867, 15 Stats., 593.	Nine installments of $20,000 each, unappropriated, indefinite as to time and liable to be discontinued, 15 Stats., 596., sec. 10.
500.00	.....	500.00	Apr. 2	Treaty of Apr. 19, 1858, 11 Stats., 743.	Eighteen installments of $15,000 each, 11 Stats., 744, sec. 4.
100.00	70.00	.....	Mar. 11	Treaty of Sept. 24, 1850, art. 3, 9, Stats., 974.	No treaty funds.
1,500.00	1,050.00	.....	Dec. 22	Treaty of Sept. 17, 1857, Revised Treaties, 1047	See L. J. Allen.
450.00	.....	450.00	Nov. 2	Treaty of Oct. 17, 1865, 14 Stats., 713.	Nine installments of $20,000 each, unappropriated, indefinite as to time and liable to be discontinued, 15 Stats., 596, sec. 10.
700.00	.....	700.00	Jan. 5	Treaty of Oct. 28, 1865, 14 Stats., 747.	Eleven installments of $130,000 each, as per treaty, 15 Stats., 635.
1,500.00	.....	1,500.00	Mar. 12	Treaty of July 23, 1851, 10 Stats., 949.	Eleven installments of $130,000 each, as per treaty, 15 Stats., 635.
720.00	720.00	.....	Aug. 26	Treaty of Sept. 9, 1849, art. 3, 9 Stats., 974.	No treaty fund.
1,345.00	.....	1,345.00	Sept. 22	Treaty of Sept. 9, 1849, 9 Stats., 974.	Do.
450.00	360.00	.....	Mar. 4	Art. 3, same treaty, Stats., 1406.	Do.
16,925.00	362.00	.....	Aug. 24	Treaty of Feb. 2, 1867, art. 2, 14 Stats., 703; treaty of Mar. 17, 1866, art. 4, 14 Stats., 747.	Ten installments, $20,000 each, limited, 15 Stats., 596, sec. 10. Sioux, 11 installments of $13,000 each, 15 Stats., 638, sec. 10.
13,200.00	8,575.00	.....	Feb. 25	Treaty of Mar. 2, 1868, art. 6, 15 Stats., 619; treaty of Sept. 13, 1873, art. 5, 18 Stats., 36.	Ten installments of $30,000 each, treaty, 15 Stats., 622.
1,760.00	177.00	.....	May 12	Treaty of Aug. 25, 1868, art. 1, 15 Stats., 581.	Nine installments of $30,000 each, 15 Stats., 584, sec. 10.
3,581.00	600.00	.....	June 2	Treaty of Dec. 5, 1861, art. 2, 12 Stats., 1163; treaty of Sept. 17, 1851, art. 4, Laramie treaty.	Ten installments of $20,000 each, 15 Stats., 596, sec. 10; 11 installments of $13,000 each, 15 Stats., 638, sec. 10.
234.00	.....	234.00	Aug. 25	Treaty of June 9, 1855, 12 Stats., 951.	No treaty fund.
200.00	100.00	.....	Oct. 17	Treaty of Feb. 5, 1855, art. 6, 10 Stats., 1027.	Do.
1,488.50	1,270.00	.....	June 18	Treaty of Mar. 5, 1853, arts. 1, 2, 3, 4, 10 Stats., 979.	Do.
225.00	225.00	.....	May 19	Treaty of July 3, 1868, art. 1, 15 Stats., 673.	Eleven installments of $10,000 each, 15 Stats., 676.
900.00	500.00	.....	Oct. 22	Treaty of Sept. 10, 1853, art. 6, 10 Stats., 1018.	No treaty fund.
1,425.00	.....	1,425.00	Jan. 3	Treaty of Oct. 28, 1865, 14 Stats., 747; treaty of April 29, 1868, 15 Stats., 635.	Eleven installments of $130,000 each 15 Stats, 638, sec. 10.
120.50	.....	120.50	Dec. 14	Treaty of Nov. 15, 1854, 10 Stats., 1119.	No treaty funds.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
2130	Beatty, Robert H., Seattle, Wash.	Dwelling, potatoes, provisions, etc.	Klickitat, Puyallup, Muckleshoot, Duwarmish, *et al.*	Jan., 1856	1857
3523	Beck, O. J., Osage County, Kans.	Horse	Sac and Fox	Oct., 1869	Mar. 14, '74
1493	Bell, Patrick, Humboldt County Nev.	Furniture and clothing.	Pi Ute	Jan. 4, '64	Jan., 1875
1771	Berthianne, Frank, Laramie County, Wyo.	Horses	Sioux and Bannock.	1868 and 1872.	July 5, '78
694	Bishop, Alphonse. Marion County, Kans.	Horse	Keechy	Sept. 17, '67	Apr. 16, '69
1915	Bohls, John, Scott County Minn.	Hog	Sioux	Mar. 20, '58	1858
2588	Bolton, William B., Seattle, Wash.	Crops destroyed, barn, stable, etc.	Puyallup, Skaget, Klickitat, *et al.*	1855	1857
526	Bordeau, James (deceased), Rosebud Agency.	Horses and mules	Brulé Sioux	May, 1867	Nov. 5, '67
2112	Borego, Juan Antonio, Rio Arriba County, N. Mex.	Mules, horse, ox	Jicarilla Apache	Aug. 25, '54	Feb., 1855
1269	Boucher, Francis C., Whetstone Agency.	Horses	Sioux	Dec., 1872, and Feb., 1873.	Nov. 22, '73
1268	Boughter, Frazier, a surgeon in the U. S. Army.	2 cows	do	Oct. 2, '72	Aug., 1873
2127	Brannan, William H. (deceased), A. A. Denny (administrator), King County, Wash.	Grain, clothing, etc.	Puyallup and Klickatat.	1855	1857
3147	Briggs, William F., Douglas County, Oregon.	1 rifle	Umpqua, Cow Creek, and Red River.	Oct. 1, '55	Jan. 2, '84
1572	Brimmer, John G., Montcalm County, Mich.	Outfit, clothing, etc.	Unknown	Sept. 14, '74	1875
683	Brown, Charles C., Marion County, Kans.	Damage to horses.	Keechie	Sept., 1867	Apr. 26, '69
1903	Brown. George, Pierce County, Wash.	Dwelling, grain, etc.	Puyallup and Nisqually.	1856	1857
1364	Brown, Samuel W., Arapahoe County, Colo.	Cordwood	Ute	Oct. 12, '73	Apr. 25, '74
1764	Bullock, William G., Laramie County, Wyo.	Mules, cow, provisions.	Ogalalla Sioux	May 4, '70	June 28, '78
2122	Byron, John, Douglas County, Oregon.	House, wheat, tools, etc.	Umpqua and Cow Creek.	May 15, '56	Mar., 1858
1675	Calaway, James and Dorcas, Wabash County, Ind.	Mules, wagons, etc.	Cheyenne	July 3, '74	Nov. 24, '76
1688	Calfee, White, Gallatin County, Mont.	Mules	Sioux	June and July, 1875	May 24, '77
2953	Campbell, Daniel, Brainard, Minn.	1 ox	Chippewa	July 4, '81	Oct. 10, '83
1262	Campbell, Fannie M., Gallatin County, Mont.	1 horse	Sioux	July 24, '71	Nov. 3, '73
1261	Campbell, Gurdon H., Gallatin County, Mont.	Horses	do	July 24, '71	Nov. 3, '73
1535	Carl, jr., William, Barbour County, Kans.	Mules	Osage	1874	Mar. 1, '75
901	Carpenter, Henry, Bernalillo County, N. Mex.	Horses, mules	Navajo	May 29, '70	Mar. 1, '71
1133	do	Mules	do	June 10, '64	Dec. 11, '72
955	Carter, C. L., Palo Pinto County, Tex.	Horses	Kiowa and Comanche.	Sept., 1870–1871.	Jan. 8, '72

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
$708.00	$708.00	.....	1887. Sept. 15	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1133; treaty of Jan. 22, 1855, art. 8, 12 Stats., 931.	No treaty funds.
175.00	.....	$175.00	June 4	Treaty of Oct. 1, 1859, 15 Stats., 467; treaty of Feb. 18, 1867, 15 Stats., 495.	Interest on $200,000, treaty Oct. 21, 1837; interest on $800.00, treaty Oct. 21, 1842; interest on $157,400, treaty Oct. 21, 1837; 7 Stats., 541, 543, and 596, sec. 2.
221.00	.....	221.00	May 16	Holding amicable relations with the Government and on a reservation set apart in 1859 under an agent.	See George Baggs above, No. 2626.
300.00	.....	300.00	June 23	Treaty of Sioux, 1865, 14 Stats., 747; treaty of Bannock, 1868, 15 Stats., 673.	See J. L. Allen, No. 1512. Eleven installments of $10,000 each, 15 Stats., 676.
100.00	75.00	.....	Mar. 26	Treaty of Mar. 8, 1847, art. 2, 9 Stats., 844.	No treaty fund.
25.00	.....	25.00	Sept. 1	Treaty of Feb. 24, 1853, 10 Stats., 949.	See J. L. Allen above.
1,146.00	916.80	.....	Aug. 29	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.
1,875.00	1,350.00	.....	June 6	Treaty of Oct. 14, 1865, art. 1, 14 Stats., 699.	See J. L. Allen above.
720.00	315.00	.....	Mar. 17	Treaty of July 1, 1852, arts. 2 and 5, 10 Stats., 979.	No treaty fund.
375.00	225.00	.....	1886. Dec. 31	Treaty of Feb. 24, 1869, art. 1, 15 Stats., 635.	See J. L. Allen above.
145.00	80.00	.....	1887. Jan. 5	Treaty of Mar. 17, 1866, art. 1, 14 Stats., 743.	Do.
907.00	907.00	.....	Sept. 15	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1133; treaty of June 9, 1855, art. 8, 12 Stats., 951.	No treaty fund.
75.00	40.00	(*)	May 19	Treaty of Nov. 29, 1854, art. 8, 10 Stats., 1125.	
100.00	100.00	.....	Aug. 25		
175.00	.....	175.00	Mar. 22	Treaty of May 15, 1846, 9 Stats., 844.	Do.
1,000.00	992.50	.....	Mar. 12	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1132.	Do.
48.00	48.00	.....	Aug. 23	Treaty Nov. 6, 1868, 15 Stats., 619.	Same as George Baggs, No. 2626.
1,064.25	.....	1,064.25	Apr. 26	Treaty Sept. 17, 1857, Rev. Ind. Tr., 1047.	See J. L. Allen above.
828.80	428.00	.....	Oct. 14	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1027.	No treaty fund.
625.00	625.00	.....	Mar. 1	Treaty Aug. 19, 1868, art. 1, 15 Stats., 655.	See L. A. Allen, above.
1,000.00	750.00	.....	June 8	Treaty Apr. 29, 1868, art. 1, 15 Stats., 635.	See J. L. Allen.
135.00	75.00	.....	Oct. 12	Treaty Apr. 7, 1855, art. 9, 10 Stats., 1165.	No treaty fund.
200.00	150.00	.....	Apr. 19	Treaty Feb. 26, 1869, art. 1, 15 Stats., 635.	See J. L. Allen above.
2,300.00	1,625.00	.....	Apr. 19	Treaty same as No. 1262.	Do.
625.00	350.00	.....	Aug. 23	Treaty Sept. 29, 1865, art. 10, 14 Stats., 687.	Interest on $69,120, 7 Stats., 242; also $376,500, annual interest on trust fund.
1,650.00	1,350.00	.....	Oct. 20	Treaty June 1, 1868, art. 1, 15 Stats., 667.	No treaty fund.
5,700.00	4,300.00	(*)	Oct. 20	Treaty Sept. 9, 1849, art. 3, 9 Stats., 974.	Do.
2,000.00	1,120.00	.....	Aug. 26	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581.	Nine installments, $30,000 each, 15 Stats., 584 and 590.

* Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1428	Casados, Miguel, San Miguel County, N. Mex.	Horses	Navajo	Sept. 15, '51	Aug. 17, '74
1441	.....do	Sheep	....do	Sept. 29, '67	Aug. 17, '74
726	Casados, Miguel Roival y, Santa Fé County, N. Mex.	Horse	....do	June 8, '69	July 28, '69
1558	Casselberry, J. R., Grand River Agency, Dak.	Pistols, cloth, etc.	Upper Yanctonais Sioux tribe.	Apr. 3, '75	May 22, '75
1495	Cedilla, Antonio, San Miguel County, N. Mex.	Horses, goats	Navajo	Mar. 10, '62	Dec. 9, '74
1648	Chaves, Dionicio, Chaves, Francisco, Valencio County, N. Mex.	Cattle, etc	....do	1864	1876
1380	Chaves, Anselmo, Sapelloo, San Miguel County, N. Mex.	Horses and sheep.	Mes. Apache	May, 1863	Aug. 3, '74
1579	Chaves, Antonio José, Bernalillo County, N. Mex.	Sheep	Navajo	Dec. 20, '68	Sept. 17, '75
1404	Chaves, José Felis, Peralta, N. Mex.	Mules and horses	Apache	Feb. 3, '57	May 3, '60
2149	Charles, José Maria, Albuquerque, N. Mex.	Mares, etc	Navajo	1857	1858
1488	Chavez, Preciliana, Albany County, Wyo.	Horses	Ogalalla Sioux	Dec. 7, '70	Jan. 23, '75
1748	Chaddock, Luther, Seward County, Nebr.	Damages to meadow land.	Ponca	June, 1877	May, 1878
1066	*Chevalier, Thomas, Detroit, Mich.	Tent, wagons, cattle, etc.	Ogalalla Sioux	Apr. 25, '68	July 22, '72
1587	Clark, E. L., Kiowa Agency.	Oxen, wagon, etc.	Kiowa and Comanche.	Aug., 1874	Oct. 5, '75
259	Clark, James N., Wasco County, Oregon.	Grain, stock, etc.	Oregon Snake	1866	1867
1776	Carr, Andrew, Holt County, Mo.	Mules and horses.	Sioux	Apr. 29, '67	July 17, '78
1360	Coad, John F. and Mark M. Laramie County, Wyo.	Hay machines, etc.	Ogalalla Sioux	Aug. 21, '71	May 15, '74
1197	*Cottier, David, Laramie County, Wyo.	Mules, etc	Sioux,	Mar., 1868; Apr., 1870	1873
2945	Coleman, Michael, Holt County, Neba.	1 colt	...do	Jan., 1880	Aug. 9, '83
1346	Colomb, John B., Whetstone Agency.	House, machines, etc.	Brulé Sioux	Apr. 15, '74	May 1, '74
1347	.....do	House, hay, and wagon.	....do	Oct. 15, '73	May 1, '74
1348	.....do	2 horses	Minn. Sioux	Apr. 15, '71	May 1, '74
2174	Combs. Martin, Douglas County, Oregon.	Wheat, cattle, etc.	Cow Creek, Rogue River, and Grove Creek.	Oct. 22, '55	Dec., 1857
1567	Conoway, David, Waterloo, Nebr.	1 cow	Omaha	Nov. 11, '74	June 16, '75
1694	Conlon, James, Missoula County, Mont.	1 horse	Nez Perce	Aug. 21, '77	Dec. 31, '77
1342	Copeland, John N., Lincoln County, N. Mex.	Horses and cattle.	Mescalero Apache	Sept., 1873	Feb., 1874
1520	Convery, James, Albany County, Wyo.	Horses, provisions, etc.	Cheyenne and Sioux.	May and Sept. '72	Jan., 1875
1442	Cordoba, Anastacio, San Miguel County, N. Mex.	Horses and mules.	Navajo	Nov. 17, '58	Aug. 17, '74
2795	Corn, Peter, Lincoln County, N. Mex.	2 mules	Mescalero Apache	Mar., 1880	July 7, '81
2796	.....do	1 stallion	...do	Sept. 19, '80	July 7, '81
3257	.....do	Horse	...do	....1880....	May 28, '84
3258	.....do	Horse	...do	Feb. 22, '81	May 28, '84
950	Cretsinger, Daniel, Parker County, Tex.	Horses	Kiowa and Comanche.	1867 and 1871.	Sept. 30, 1871.
949	Cretsinger, H. J., Parker County, Tex.	Horses	....do	1866 and 1867.	Sept. 30, 1871.
452	Crane, Jesse H., Carthage, N. Mex.	Horses, mules, and ponies.	Kiowa	July 17, 1864.	Mar. 29, '67
693	Creamer, Jane, Marion County, Kans.	Mare and colt	Keechy	Sept. 17, '67	Apr. 16, '69

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$585.00	$405.00	(*)	Oct. 29	Treaty Sept. 9, 1849, art. 2, 9 Stats., 974.	No treaty fund.
286.00	214.50	(*)	Oct. 29	.....do.....	Do.
100.00	50.00	.....	May 16	Treaty June 1, 1868, art. 8, 15 Stats., 667.	Do.
720.00	360.00	.....	Mar. 18	Treaty Mar. 17, 1866, art. 1, 14 Stats., 743.	See J. S. Allen above.
749.00	447.00	(*)	Mar. 4	Treaty Sept. 24, 1850, art. 3, 9 Stats., 974.	No treaty fund.
4,880.00	1,515.00 3,195.00	(*)	Dec. 27	Treaty Sept. 24, 1850, art. 3, 9 Stats., 974.	Do.
766.00	766.00	(*)	Aug. 25	Treaty July 1, 1852, arts. 2 and 3, 10 Stats., 979.	Do.
3,750.00	3,000.00	(*)	Dec. 5	Treaty June 1, 1868, art. 1, 15 Stats., 667.	Do.
780.00	.....	$780.00	Oct. 29	Treaty July 1, 1852, 10 Stats., 979.	Do.
1,700.00	1,015.00	.....	Dec. 16	Treaty Sept. 9, 1849, art. 2, 9 Stats., 974.	Do.
900.00	720.00	(*)	Oct. 29	Treaty Oct, 28, 1865. art. 1, 14 Stats., 747.	See J. Allen above.
100.00	.....	100.00	Nov. 2	Treaty Mar. 10, 1865, 14 Stats, 675.	One installment of $8,000, 12 Stats., 997, Sec. 2.
1,175.75	587.87	(*)	Aug. 25	Treaty Mar. 17, 1866, art. 1, 14 Stats., 747.	See J. L. Allen above.
300.00	245.00	.....	Mar. 17	Treaty Oct. 21. 1867, art., 1, 15 Stats., 581.	See J. H. Crane.
6,494.00	4,675.00	.....	Dec. 17	Treaty Aug. 12, 1865, art. 4, 14 Stats., 683.	See O. A. Barton,
800.00	.....	800.09	July 23	Treaty Sept. 17, 1851 p. 1047 Revised Treaties.	See J. L. Allen above.
11,200.00	360.00	.....	April 2	Treaty same as No. 1066.	Do.
1,832.10	†390.00 *840.50	.....	Dec. 16	Treaty Oct. 28, 1865, art. 1, 14 Stat., 747.	Do.
125.00	.....	125.00	Oct. 14	Treaty Oct. 14, 1865, 14 Stats., 699.	Do.
850.00	.....	850.00	Jan. 19	Treaty Apr. 29, 1868, 15 Stats.. 635.	Do.
6,750.00	.....	6,750.00	Jan. 24	Treaty same as No. 1346.	Do.
250.00	.....	250.00	June 12	....do.....	Do.
7,494.00	5,620.50	.....	Jan. 18	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1018-1027.	No treaty fund.
50.00	.....	50.00	Aug. 26	Treaty Mar. 16, 1854, 10 Stats., 1043.	Seven installments, $10,000 each, 10 Stats., 1044, sec 4.
125.00	.....	125.00	Oct. 10	Treaty Aug. 13, 1868, 15 Stats., 693.	No treaty fund.
1,120.00	.....	1,120.00	Jan. 15	Treaty Oct. 21, 1867, 15 Stats., 589.	No treaty fund.
866.50	.....	866.50	Aug. 23	Treaty May 10, 1868, art. 1, 15 Stats., 655.	See William Baker, above.
1,005.00	600.00	(*)	Aug. 23	Treaty Sept. 24, 1850, art. 3, 9 Stats., 974.	No treaty fund.
250.00	250.00	.....	May 19	Treaty Aug. 25, 1868, art. 1, 15 Stats., 589.	Do.
150.00	150.00	.....	May 16	Treaty same as No. 2795.	Do.
75.00	75.00	.....	May 26	Treaty July 1, 1852, arts. 2 and 3, 10 Stats., 979.	Do.
75.00	75.00	.....	May 20	Treaty same as No. 2795.	Do.
1,200.00	1,125.00	(*)	Aug. 26	Treaty Oct. 18, 1865, 14 Stats., 717.	See J. H. Crane.
560.00	.....	560.00	Aug. 26	Treaty Oct. 21, 1867, p. 318, Rev. Stats.	Do.
4,800.00	3,300.00	.....	Apr. 5	Treaty July 27, 1853, art. 4, 10 Stats, 1013.	Nine installments of $30,000, 15 Stats., 584 and 590.
150.00	.....	150.00	Mar. 25	Treaty March 8, 1847, 9 Stats., 844.	No treaty fund.

*Barred, †1870, 1868.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians chaged with depredations.	When committed.	When filed.
1498	Davenport, Franklin, Cimarron, N. Mex.	Mare and colt.....	Cheyenne	....1874....	Jan., 1875
1640	Dawkins, Thomas C., Pueblo, Colo.	Mules	....do	Apr. 14,'76	May 3,'76
3139	Day, George W., heir of Adam Day, Douglas County, Oreg.	House and cows ..	Rogue River.....	Mar., 1856.	Nov. 12,'83
2187	Day, W. P., Coose County, Oreg.	House, cattle, etc.	....do	Mar.24,'56	1856.
573	Dean (Dehu), Andrew, Ellis County, Kans.	Mules, wagon, etc.	Cheyenne.....	... 1867...	May 4, '68
2188	Denny, David T., King County, Wash.	Potatoes, clothing, etc.	Puyallup *et al*	Jan., 1856 .	....1856....
1038	Deroche, B. J., Choteau County, Mont.	Cattle	Piegan	Dec., 1868, Jan., '69.	Apr. 2, '72
1609	Dobbin, P., Pilot Grove, Tex.	1 horse	Osage.....	Apr. 1, '71	Jan. 3, '76
2199	Dobbs, Jonathan L., Belknap, Tex.	5 horses	Comanche	Jan. 20, '55	Jan. 7, '57
2858	Douglass, James, Nuckolls County, Nebr.	Horses, cows, and hogs.	Sioux and Cheyenne.	Aug. 1863–1864.	June 22,'82
4025	Dowell, B. F., Portland, Oregon.	1 mule.....	Rogue River.....	Oct. 22, '55	Dec. 13, '56
1297	Dowling, Nicholas, Greenwood County, Colo.	Cattle, etc	Cheyenne.....	Oct. 2, '73	Feb. 18, '74
*1864	Downey, William R., Pierce County, Wash.	Hogs, potatoes, etc.	Nisqually, Puyallup, and other.	Oct., 1855	Mar. 31,'80
499	Dubray, Antoine, Rosebud Agency, Dak.	9 horses	Sioux and Cheyenne.	June 28,'65	Feb., 1867
1445	Duran, José, San Migue County, N. Mex.	18 horses	Navajo	Sept. 12,'63	Aug. 17,'74
2189	Durand, Victor, Deer Lodge County, Mont.	Cow, damages, etc.	Pend d'Oreilles ...	Feb. 22, '70	Mar. 30,'70
2185	Duvall, Alexander, Doña Aña County, N. Mex.	1 mule.....	Gila Apache.....	1855	Sept. 1, '55
1800	Eastern Montana Mining and Smelting Company, Gallatin County, Mont.	Smelting works...	Bannock.....	Aug. or Sept. '78	Feb. 2, '79
2202	Eaton, Charles H., Thurston County, Wash.	Oats and harness .	Nisqually *et al* ...	Apr. 27,'56	Year 1856
1462	Eggert, Fritz, San Miguel County, N. Mex.	15 cows.....	Kiowa	May 15, '72	Dec. 9, 74
2204	Embree, Allen, Douglas County, Oregon.	Dwelling, tools, etc.	Umpqua.....	June 19,'56	Dec., 1857
3149	Estes, J. H., Wichita County, Tex.	Provisions, clothing, etc.	Kiowa	1879	Dec. 12, '83
2205	† Ettlinger, Sigmund, Jackson County, Oregon.	1 Spanish horse...	Rogue River.....	Aug., 1853	Jan., 1855
1447	Fahey, William H., Arapaho County, Colo.	1 pony	Ute	Dec. 17, '73	Dec. 9, '74
3259	Farming, Jos. T., Lincoln County, N. Mex.	1 mare, 12 beef cows.	Mescalero Apache	Oct. 2, '80	May 28,'84
2794	Fanning, Martin W., Lincoln County, N. Mex.	3 Horses.....	....do	Mar. 31, '80	July 7, '81
1919	Farnum, Philo, Long Prairie, Todd County, Minn.	2 cows, provisions, etc.	Sioux	May, 1858	In 1858
2211	Fernandez, José Dolores, Taos Co., N. Mex.	7 cows, 3 bulls	Jicarilla Apache..	May 17, '55	Nov. 2, '55
1537	Fieldhouse, Isaac, Carbon County, Wyo.	House, tools, etc ..	Arapaho and Sioux	July 15, '74	Mar. 9, '75

*Barred. † Award of Commission appointed by act of Congress. See 10 Stat. L., 1018.

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$250.00	$125.00	.....	Mar. 31	Treaty Oct. 28, 1867, art. 1, 15 Stats., 593.	Ten installments of $12,000 each, 15 Stats., 657, sec 6.
1,400.00	1,400.00	.....	Aug. 25	Treaty Aug 19, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
500.00	350.00	(*)	May 19	Treaty Jan. 5, 1855, art. 6, 10 Stats., 1018.	No treaty fund.
913.37½	913.37½	.....	Oct. 14	Treaty same as No. 3139.	Do.
550.00	350.00	.....	Mar. 24	Treaty same as No. 1498.	See L. A. Allen.
70.00	.....	$70.00	Mar. 17	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
1,000.00	.....	1,000.00	Aug. 26	Treaty Oct. 17, 1855, 11 Stats., 657.	Do.
60.00	50.00	(*)	Aug. 26	Treaty Nov. 10, 1808, art. 9, 7 Stats., 107.	See William Carl, jr.
500.00	500.00	.....	Sept. 29	Treaty Feb. 12, 1854, art. 4, 10 Stats., 1013.	See J. H. Crane.
11,658.00	3,400.00	(*)	Mar. 18	Treaty Dec. 5, 1861, art. 2, 12 Stats., 1163; treaty Sept. 17, 1851, art. 4, p. 1048; Revised Treaties.	Eleven installments of $130,000 each, 15 Stats., 638. Cheyenne, 10 install-ments of $20,000 each; 15, Stats., 596, sec. 10.
200.00	200.00	.....	Oct. 17	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1018.	No treaty fund.
1,644.00	1,000.00	.....	July 6	Treaty May 10, 1868, art 1, 15 Stats., 655.	See L. A. Allen.
400.00	400.00	(*)	Sept. 9	Treaty Apr. 10, 1855, art 8, 10 Stats., 1132.	No treaty fund.
675.00	.....	675.00	Apr. 19	Treaty Feb., 1861, 12 Stats., 1163; treaty Sept. 17, 1851, 11 Stats., 749.	See W. Baker.
1,800.00	1,350.00	(*)	Aug. 26	Treaty Sept. 24, 1850, art 3, 9 Stats., 974.	No treaty fund.
670.00	120.00	.....	Apr. 25	Treaty Oct. 17, 1855, art. 11, 11 Stats., 657.	Do.
60.00	.....	60.00	Oct. 29	Treaty July 1, 1852, 10 Stats., 979.	Do.
31,827.00	.....	31,827.00	Jan. 11	Treaty July 3, 1868, 15 Stats., 673.	Eleven installments of $5,000 each, 15 Stats., 676, sec 9.
100.12½	49.50	.....	Mar. 18	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.
525.00	225.00	.....	Mar. 4	Treaty Aug. 25, 1868, art. 1, 15 Stats., 581.	See J. H. Crane, above.
567.75	500.00	.....	Oct. 17	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1027.	No treaty fund.
722.00	417.00	.....	May 19	Treaty same as No. 1462.	See J. H. Crane.
120.00	130.00	.....	Nov. 26	Treaty Sept. 10, 1853, art. 6, 10 Stats., 1018.	No treaty fund.
65.00	40.00	.....	Feb. 18	Treaty Nov. 6, 1868, art. 5, 15 Stats., 619.	Ten installments of $30,000 each, 15 Stats., 622, sec. 11.
330.00	330.00	.....	May 20	Treaty Aug. 25, 1868, art. 1, 15 Stats., 581-9.	No treaty fund.
200.00	200.00	.....	May 20	Treaty same as No. 3259.	Do.
143.00	80.00	.....	Sept. 10	Treaty art. 4, Revised Treaties, p. 1048.	See J. L. Allen, above.
220.00	.....	220.00	Apr. 5	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
2,725.00	1,005.00	.....	Sept. 30	Treaty Mar. 17, 1866, art. 1, 14 Stats., 747; treaty Aug. 25, 1868, art. 1, 15 Stats., 655.	Nine installments $20,000 each, 15 Stats., 596, sec. 10. Eleven installments $130,000 each, 15 Stats., 638 sec. 10.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1720	Findley, James M., Skamania County, Wash.	Oxen, horse, tools, etc.	Klicitat	Mar., 1856	June, 1856
2803	Flowers and Fitzhugh, Grant County, Oregon.	Horses	Pi-Ute and Bannock.	July 3, '78	Apr. 6, '81
1691	Frazer, George M., New Mexico.	Team, wagon, and merchandise.	Apache	Mar. 11, '57	Nov. 21, '57
1522	Fredley, Frederick, Yuma County, Ariz.	Mules, horses, etc.	Apache	Dec. 13, '72	Feb., 1875
776	French, George, Neosho County, Kans.	Horses	Osage	Oct. 15, '66	July 3, '69
2845	French, Thomas, Kearney County, Nebr.	Hotel goods, merchandise.	Sioux	Oct. 14, '64	June 22, '82
1323	Friend, John S., Butler County, Kans.	Damages to wife, son, and property.	Comanche	Feb. 5, '68	Mar. 24, '74
1458	Gallegos, Francisco, San Miguel County, N. Mex.	Horses	Navajo	Mch., 1853	Dec., 1874
1422	Gallegos, Nazaria, San Miguel County, N. Mex.	Mares, mules, jacks.	Mescalero Apache	May 1, '62	Aug. 17, '74
1440	do	Horses, mules, etc.	Navajo	1867	1874
1386	Gallegos, Querino, San Miguel County, N. Mex.	Mares, colts, jack.	Mescalero Apache	Aug. 15, '61	Aug. 8, '74
1393	Gallegos, Quereno, San Miguel County, N. Mex.	6 jacks, 1 mule, 1 horse.	Navajo	June 10, '68	Aug. 11, '74
3542	Gallop, Martha A., Mitchell County, Kans.	Bedding, clothing.	Cheyenne and Arapaho.	Aug. 12, '68	Mch. 14, '74
1425	Garcia, José Maria, San Miguel County, N. Mex.	9 cows	Kiowa	Mch. 1872	July 23, '74
1401	Garcia, José Silberio, Las Vegas, San Miguel County, N. Mex.	11 oxen	Mescalero Apache	Feb. 11, '72	Apr. 26, '74
1417	Garcia, Juan B., Mora County, N. Mex.	2 horses, 2 mares	do	June 27, '60	Nov. 27, '74
1604	Garcia, Vicente, San Miguel County, N. Mex.	Oxen, property	Cheyenne	July 15, '67	Dec. 17, '75
1434	Garcia, Vincente, San Miguel County, N. Mex.	Sheep, etc	Navajo	Jan. 19, '58	Aug. 17, '74
1403	Gemmell, James, Madison County, Mont.	Harness, etc	Crow	Sept. 12, '74	Oct. 8, '74
2256	George & Co., Washington Territory.	Dry goods, expenses, etc.	Sah-heh-wamish	Dec. 25, '54	1857
1921	Getty, Jerome J., Getty, Minn.	2 cows	Sioux	July 5, '58	1858
1343	Gilbert, Robert M., Lincoln County, N. Mex.	Stock stolen	Mescalero Apache	July 13, '73	Dec., 1873
112	Gillmore, Andrew H., Morris County, Kans.	1 horse	Pawnee	Aug. 26, '63	Jan. 29, '64
2252	Gilmore, James, Douglas County, Oreg.	1 American mare	Umpqua	July or Aug., '57.	In 1858
1322	Goddard, Cyrus F., Leavenworth County, Kans.	Mules and horses.	Sioux	1866	Mar. 24, '74
2798	Gobrick, Carl L., Pierce County, Wash.	Potatoes, wheat, etc.	Yakima, Puyallup, and Nisqually	1855	July 11, '81
727	Gomez, Ramon Duraw y, Sante Fé County, N. Mex.	Horse	Navajo	June 8, '69	July 28, '69
1391	Gonzales, Cristino, San Miguel County, N. Mex.	Cattle	do	Sept. 15, '57	Aug. 8, '74
1450	Gonzales, Hilario, San Miguel County, N. Mex.	Stock and sheep	do	Aug. 22, '62	Dec. 9, '74
1451	do	Horses	do	Nov. 11, '67	Dec. 9, '74
1412	Gonzales, Marcus, San Miguel County, N. Mex.	do	do	May 26, '66	Nov. 6, '74
1449	Gonzales, Julian, San Miguel County, N. Mex.	Sheep, etc	do	1864	1874
1448	Gonzales, Rufino, San Miguel County, N. Mex.	Cows, calves, horse, asses, etc,	Cheyenne	Apr. 25, '52	Dec. 9, '74
2244	Goodell, G. W., Thurston County, Wash.	1 colt	Nisqually	May, 1855	In 1856
1083	Goodwin, O. P., Wyoming	Horses	Kiowa	1860	1861
316	Goodwin, O. P., Larimer County, Colo.	do	Sioux	Dec. 1869	Sept., 1872

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same:
			1887.		
$715.00	.....	$715.00	Nov. 7	Treaty June 9, 1855, 12 Stats., 951.	No treaty fund.
4,250.00	$3,000.00	.....	July 7	Treaty Feb. 24, 1869, art. 1, 15 Stats., 673.	Bannocks have eleven installments $10,000 each, 15 Stats., 676, sec. 3.
4,000.00	.....	4,000.00	Oct. 13	Treaty July 27, 1853, 10 Stats., 1013.	No treaty fund.
5,350.00	3,175.00	.....	Aug. 30	Treaty Mar. 5, 1853, art. 3, 10 Stats., 979.	Do.
800.00	.....	800.00	Jan. 24	Treaty Nov. 10, 1808, 7 Stats., 107.	See William Carl, jr.
11,836.00	.....	11,836.00	Mar. 24	Treaty Sept. 17, 1857, p. 1047, Revised Treaties.	See J. L. Allen, above.
9,017.00	†7,397.00	(*)	Feb. 21	Treaty May 26, 1866, art. 2, 14 Stats., 717.	Ten installments $30,000 each, 15 Stats., 584, sec. 10.
1,000.00	765.00	(*)	Aug. 31	Treaty Sept. 9, 1849, art. 2, 9 Stats., 974.	No treaty fund.
2,230.00	1,500.00	(*)	Oct. 29	Treaty July 1, 1852, art. 3, 10 Stats., 979.	No treaty funds.
430.00	.....	430.00	Dec. 12	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
3,870.00	.....	3,870.00	Nov. 26	Treaty same as No. 1422.	No treaty fund.
450.00	.....	450.00	Nov. 26	Treaty June 1, 1868, 15 Stats., 667.	Do.
298.25	223.69	(*)	June 17	Treaty July 25, 1868, art. 1, 15 Stats., 593.	Nine installments, $20,000 each, 15 Stats., p. 596, sec. 10.
225.00	.....	225.00	Aug. 23	Treaty Oct. 21, 1867, 15 Stats., 581.	See J. H. Crane.
275.00	.....	275.00	Aug. 26	Treaty July 27, 1853, 10 Stats., 1013.	No treaty fund.
600.00	400.00	(*)	Aug. 23	Treaty Mch. 25, 1853, art 1-3, 10 Stats., 979.	Do.
200.00	150.00	(*)	Oct. 21	Treaty Oct. 14, 1865, art. 1, 14 Stats., 703.	See L. A. Allen.
1,480.00	1,345.00	(*)	Dec. 12	Treaty Sept. 9, 1849, art. 1, 9 Stats., 974.	No treaty fund.
76.50	49.50	.....	Apr. 19	Treaty May 7, 1868, art. 1, 15 Stats., 649.	Ten installments of $15,000 each, 15 Stats., 651; 18 installments of $30,000 each, act of April 11, 1882.
483.40	.....	483.40	Apr. 1	Treaty Dec. 1854, 10 Stats., 1132.	No treaty fund.
150.00	.....	150.00	Aug. 31	Treaty, revised treaties, p. 1047.	See J. L. Allen, above.
625.00	.....	625.00	Jan. 18	Treaty Aug. 25, 1868, 15 Stats., 581-589.	No treaty fund.
80.00	.....	80.00	Oct. 29	Treaty Sept. 24, 1857, 11 Stats., 729.	For annuity goods, $30,000 annually, 11 Stats., 729, sec. 2.
400.00	200.00	.....	Oct. 13	Treaty Apr. 10, 1855, art. 8, 10 Stats., 1122.	No treaty fund.
4,050.00	3,120.00	(*)	Aug. 24	Treaty Oct. 28, 1865, art. 1, 14 Stats., 747.	See J. L. Allen, above.
1,089.00	.....	1,089.00	July 9	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
200.00	100.00	.....	May 19	Treaty June 1, 1868, art. 8, 15 Stats., 667.	Do.
880.00	.....	880.00	Oct. 29	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
14,746.00	7,708.00	(*)	Sept. 16	Same as No. 1391.	Do.
1,120.00	.....	1,120.00	Sept. 13	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
1,125.00	900.00	(*)	Nov. 3	Treaty Sept. 9, 1849, art. 5, 9 Stats., 974.	Do.
1,860.00	.....	1,860.00	Dec. 20	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
825.00	605.00	(*)	Aug. 24	Treaty Feb. 26, 1826, art. 1-5, 7 Stats., 255.	See M. A. Gallop.
75.00	.....	75.00	Mar. 31	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
2,700.00	1,800.00	.....	Dec. 14	Treaty Feb. 12, 1854, art. 4, 10 Stats., 1013.	See J. H. Crane.
460.00	240.00	.....	Mar. 19	Treaty April 29, 1858, art. 1, 15 Stats., 635.	See J. L. Allen, above.

* Barred. † First, $6,500; second, $897.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
2602	Gasson, Patrick, Plymouth County, Iowa.	Horses, expenses	Yankton Sioux	Oct. 15, '59	.....
1199	Graham, Jeremiah, Larimer County, Wyo.	4 fine mules	Minnesota Sioux	Sept. 9, '72	Mar. 8, '73
2246	Graham, Charles, Dwamish County, Wash.	Potatoes	Squawskin	Mar., 1854	1856
2248	Graham, Walter, King County, Wash.	House, etc	Puyallup *et al.*	Jan. 26, '56	In 1856
1471	Gray, James, Montague County, Tex.	2 horses	Kiowa and Comanche.	In 1872	Dec. 18, '74
489	Green, James, Fort Laramie, Dak.	Horses	Sioux	1864	Feb., 1867
554	Greenway, A. J., Marion County, Kans.	7 horses	Kiowa	July 22, '64	Feb. 1, '68
1352	Guera, Charles E., Whetstone Agency.	Mules and horses	Minnesota Sioux	Feb. 10, '73	May 7, '74
2251	Gurney, R. M., Douglas County, Oreg.	Wheat, gold, etc	Rogue River and Cow Creek.	Oct., 1855	Mar., 1858
1331	Hamilton, Alexander, Decatur County, Iowa.	Cash, library, etc	Sioux and Cheyene.	Jan. 7, '65	Mar., '73
2878	Hammond, Andrew J., Nuckolls County, Nebr.	Oxen, cows, corn, etc.	Cheyenne and Sioux.	Aug. 9, '64	June 22, '82
1238	Hance, Hall & Co., Albany County, Wyo.	Mules and horses, etc.	Sioux	Oct 25, '68	Nov. 19, '69
3301	Hammon and Taylor, Arizona.	Whisky and champagne.	Apache	Apr. 19, '82	Aug. 25, '84
2542	Harris, Mary A., Jackson County, Oregon.	House, wheat, etc.	Rogue River and Cow Creek.	Oct. 9, '55	1856
2799	Hay, Robert B., Grant County, Oregon.	Sheep, provisions, etc.	Bannock, Pi Ute, or Malheur, and Umatilla.	July 29, '78	July 19, '81
1556	Hazen, Wm. J., unknown	Hay burned	Chippewa	Fall of '73	May 3, '75
1327	Hazlewood, J. T., Stephens County, Tex.	3 horses	Kiowa and Comanche.	Sept., '73	Apr. 1, '74
1266	Hensley, John, Jack County, Tex.	Horses, mules, etc.	Comanche	Aug. 18, '73	Nov. 14, '73
1282	Henson, A. J., Jack County, Tex.	Horses	do	Aug., Nov., 1873.	Dec. 10. '73
491	Herman, Jacob, Holt County, Nebr.	do	Ogalalla and Brulé Sioux.	June 14, '65	Feb. 7, '67
1121	do	Horses and mules	Sans Arc and Ogalalla Sioux.	July 10, '65 Mar. 13, '68	Dec. 7, '72
1709	Herr, Michael S., Beaver Head County, Mont.	Horses, blankets, etc.	Nez Percé	Aug. 12, '77	Mar. 28, '78
2846	Hess, Wm. P., administrator of estate Joseph Eubanks, Kearney County, Nebr.	Oxen, cows, cattle, provisions, etc.	Cheyenne	Aug., '64	June, '82
2851	Hewitt, William, and J. D. Adams, Riley County, Nebr.	Oxen, merchandise, etc.	Cheyenne and Sioux.	In 1864	June 22, '82
2896	Hiatt, Mrs. Sarah F., Antelope County, Nebr.	Timber	Santa Sioux	Nov. 7, '82	Dec. 30, '82
536	Higgins, C. P.; Higgins, W. B. S.; and Warden & Co., Missoula County, Mont.	Cattle	Flat Head	1886	Dec. 20, '67
2890	Hines, Daniel, Kings County, Wash.	House, barn, tools.	Tulalip Reservation Indians (Flatheads).	Oct. 27, '79	Oct. 26, '82
498	Hinman, W. M., Lincoln, County, Nebr.	Groceries, tools, etc.	Ogalalla Sioux	Aug. 23, '64	Mar. 9, '68
971	Hogan, Martin, Tres Pinos, Cal.	Oxen, clothing, etc.	Sioux	Apr. 16 and Nov. 17, '67	Nov., 1871
1568	Holden, Clifford W., Edward County, Kans.	1 horse	Cheyenne	Apr. 28. '75	June 18, '75

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887		
$500.00	$225.00	.....	Dec. 19	Treaty Apr. 19, 1858, art. 11, 11 Stats., 743.	See J. L. Allen.
1,000.00	750.00	.....	Sept. 19	Treaty Oct. 10, 1865, art. 1, 14 Stats., 695.	See J. L. Allen, above.
10.00	.....	$10.00	Apr. 5	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
220.00	220.60	.....	..do	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1134.	Do.
150.00	.....	150.00	Mar. 29	Treaty Oct. 21, 1867, 15 Stats., 589.	See J. H. Crane.
540.00	.....	540.00	Mar. 22	Treaty (Laramie) 1853. (Indian Laws) 317.	See J. L. Allen, above.
1,050.00	700.00	(*)	.. do	Treaty July 27, 1853, art. 4-8, 10 Stats., 1034.	See J. H. Crane.
2,150.00	1,825.00	.....	May 16	Treaty Mar. 17, 1866, 14 Stats., 695.	See J. L. Allen, above.
444.25	344.25	.....	Oct. 14	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1018-27.	No treaty fund.
772.00	.....	772.00	Jan. 12	Treaty Feb. 18, 1861, 12 Stats., 1163; treaty Fort Laramie, 1851, Revised Indian Laws, 317.	See William Baker.
3,930.50	.....	3,930.50	Mar. 9	Treaty same as No. 1331.	Do.
4,002.50	2,600.00	.....	Jan. 10	Treaty Mar. 17, 1866, art. 1, 14 Stats., 747	See J. L. Allen, above.
238.82½	238.82½	.....,	May 27	Treaty July 1, 1852, art. 1, 10 Stats., 979.	No treaty fund.
3,862.00	1,888.50	.....	Dec. 6	Treaty Sept. 10, 1853, art. 6, 10 Stats., 1018.	Do.
2,865.17	.....	2,865.17	May 19	Treaty July 3, 1868, 15 Stats., 673.	11 installments, $5,000 each. 15, Stats., 676, sec. 9.
600.00	150.00	.....	Mar. 28	Treaty Feb. 22, 1855, art. 7, 10 Stats., 1165.	Interest in 7 annual installments of $22,666.66. 10 Stats., 1168, and 13 Stats., 694.
255.00	.....	255.00	Jan. 20	Treaty Oct., 1, 1867, 15 Stats., 581.	See J. H. Crane.
5,450.00	1,950.00	.....	July 23	Treaty Aug. 25, 1868, art. 1, 15 Stats., 581.	Do.
1,250.00	800.00	.....	Dec. 31	Treaty same as No. 1266.	Do.
1,200.00	.....	1,200.00	May 12	Treaty Sept. 17, 1851; Revised Treaty, 1047.	See J. L. Allen, above.
1,000.00	500.00	(*)	Apr. 18	Treaty Mar. 17, 1866, art. 1, 14 Stats., 747.	Do.
490.50	273.50	.....	Feb. 7	Treaty Apr. 29, 1859, art. 8, 12 Stats., 957.	No treaty fund.
15,672.60	600.00	(*)	Mar. 12	Treaty Dec. 5, 1861, art. 2, 12 Stats., 1163.	See M. A. Gallop.
10,044.00	.....	10,044.00	Mar. 12	Treaty Feb. 18, 1861, 12 Stats., 1163; treaty Laramie Indian Laws, 317.	See James Douglas.
5,000.00	.....	5,000.00	May 19	Treaty Feb. 24, 1869, 15 Stats., 635.	See J.L. Allen, above.
1,050.00	.....	1,050.00	Nov. 28	Treaty July 16, 1855, Revised Treaties, p. 383.	No treaty fund.
350.00	.....	350.00	July 14	Treaty Oct. 17, 1855, 2 Stats., 657.	Do.
1,118.20	1,000.00	(*)	Apr. 25	Treaty Feb. 26, 1859, art. 4, Revised Treaties, p. 1047.	See J. L. Allen.
4,798.00	.....	4,798.00	Dec. 14	Treaty Sep. 17, 1851, Revised Treaties, p. p. 1047.	Do.
150.00	.....	150.00	Oct. 5	Treaty Oct. 28, 1867, 15 Stats, 593.	See M. A. Gallop.

* Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1497	Howell, Andrew J., Colfax County, N. Mex.	Horse	Cheyenne	July 5 '75	Jan. 28, '75
2838	Hugus, H. C., Yam Hill, Oregon.	1 horse	Klamath	Apr. 1, '79	June 21, '83
1607	Hunton, A. J., Gallatin County, Mont.	Wheat, corn, etc.	River Crow	Sept. 10, '75	Dec. 27, '75
1507 3891	Hunter, John, Laramie County, Wyo.	Cow	Cheyenne	1872	1875
1339	James, Thomas, Johnson County, Kans.	Cattle	do	Sept. 18, '73	Apr. 11, '74
512	Jarris, Nicholas, Fort Laramie, Wyo.	Horses, mules, cattle.	Sioux	July 22, '66	Nov. 4, '67
2897	Johnson, S. P., Cleveland, Ohio.	20 silk robes, otter skins, etc.	Nez Percé	Sept. 21, '77	Jan. 5, '83
2801	Karnes, John E., Halfield, Wis.	Horses, saddles, ammunition, etc.	Cheyenne	Dec. 27, '70	Aug. 28, '81
1755	Kelley, Hiram B., Laramie County, Wyo.	20 horses	do	Oct. 5, '68	June 28, '78
1765	Kelley, Hiram B., Laramie County, Wyo.	2 horses	Sioux	In 1866	June 28, '78
2279	King, William T., Jackson County, Oregon.	House, etc	Rogue River	Oct. 9, '55	In 1857
1370	Kipp, John, Curry County, Oregon.	Dwelling, groceries, tools, etc.	do	In 1856	Sept. 8, '73
1881	Kincaid, William, Pierce County, Wash.	House furniture, etc.	Nisqually *et al*	1855	May 3, '80
1086	Knight, Joseph, Laramie County, Wyo.	18 mules	Sioux	In 1867	Sept. 26, '72
2271	Knott, Joseph, Douglas County, Oregon.	Oxen wagons	Rogue River	Oct 9, '55	Dec., 1857
1369	Knott, Thomas, Colfax County, N. Mex.	40 tons "Gramma hay."	Ute	Sept. 15, '72	July 7, '74
1378	Koon, G. W., Comanche County, Kans.	Horses, houses, services of *son by killing*.	Cheyenne	June 24, '74	Aug. 1, '74
1525	Kyle, Kobert J., Palo Pinto County, Tex.	Horse, etc	Comanche	Oct. 15, '71	Feb. 5, '75
1524	Kyle, Daniel C., Palo Pinto County, Tex.	do	Kiowa and Comanche.	1868 to 1873	In 1875
1526	Kyle, William B., Palo Pinto County, Tex.	do	Comanche	1870	1875
2284	Lacome & Bro., August, Taos County, N. Mex.	Dry goods, tobacco, etc.	Ute	July 25, '50	Dec. 5, '50
1503	Lajeunesse, Noel, Albany County, Wyo.	Horses and cattle.	Sioux	May 18, '62 July 15, '64	Jan. 29, '75
1651	Lamson, A., Dakota County, Nebr.	2 hogs	Winnebago	June 20, '75	June 23, '76
1237	Lannon, Thomas, Hays City, Kans.	Horses and mules.	Cheyenne	June 22, '67 Sept. 15, '68	June 29, '73 .....
1414	Lawrence, John B., Sequoyah County, Kans.	Mules, damages	Southern Cheyenne.	Sept. 13, '74	Nov. 16, '74
1365	Leach, H. C., Marion County, Mo.	Mules, wagons, and harness.	Sioux and Cheyenne.	June 10, '71	June 2, '74
1585	Leal, Augustin, Corrales, N. Mex.	2,600 sheep	Navajo	Dec., 1864	Sept. 25, '75
1187	Leighton, Alvin C., Ottumwa, Iowa.	16 mules, 5 horses	Sioux	Apr. 10, '67	Mar. 8, '73
1188	do	20 wagons	Sioux. Cheyenne, and Arapaho.	1868	Mar. 8, '73
1189	do	Horse and mules	Sioux	June 15, '67	Mar. 8, '73
1190	do	4 mules	do	Aug. 1, '67	Mar. 8, '73
1191	do	16 mules	Cheyenne and Arapaho.	May 26, '67	Mar. 8, '73
1192	do	6 mules; 1 horse	Sioux	Sept. 17, '66	Mar. 8, '73
1193	do	Horses and mules.	do	June 30, '66	Mar. 8, '73

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$550.00	$550.00	.....	Aug. 26	Treaty Aug. 19, 1868, art. 1, 15 Stats., 593.	See M. A. Gallop.
138.00	.....	$138.00	July 11	Treaty Oct. 14, 1864, 16 Stats., 707.	No treaty fund.
2,485.00	.....	2,485.00	Feb. 5	Treaty May 7, 1868, 15 Stats., 649.	See James Gemmell.
100.00	100.00	.....	Dec. 5	Treaty Oct. 28, 1867, art. 1, 15 Stats., 595.	See L. A. Allen.
1,085.00	.....	1,085.00	Jan. 10	Treaty Oct. 28, 1867, art. 15, stats. 593.	Do.
4,800.00	1,615.00	(*)	Nov. 7	Treaty Sept. 17, 1851, Revised Treaties, p. 1047.	See J. L. Allen, above.
1,177.50	950.00	.....	Oct. 31	.....	No treaty fund.
1,307.00	.....	1,307.00	July 11	Treaty May 10, 1868, 15 Stats., 655.	See L. A. Allen.
2,000.00	.....	2,000.00	Nov. 26	Treaty Oct. 28, 1867, 15 Stats., 593.	Do.
400.00	400.00	(†)	May 19	Treaty Sept. 7, 1851, art. 4, revised treaties, 1047.	See J. L. Allen, above.
1,981.25	.....	1,981.25	Dec. 12	Treaty Indians not proved.	No treaty fund.
728.09	380.00	(†)	Aug. 24	Treaty Sept. 10, 1853, art. 6, 10 Stats., 1018.	Do.
2,838.00	2,161.50	(†)	Dec. 23	Treaty Dec. 26, 1854, 10 Stats., 1132.	Do.
4,500.00	2,700.00	(†)	May 16	Treaty Oct. 28, 1865, art. 1, 14 Stats., 747.	See J. L. Allen, above.
2,094.65	1,744.40	.....	Dec. 13	Treaty Sept. 10, 1853, art. 6, 10 Stats., 1018.	No treaty fund.
600.00	.....	600.00	Aug. 25	Treaty Mar. 2, 1868, 15 Stats., 619.	Ten installments, of $30,000 each, Stats., 15, p. 622, sec. 11; $30,000 annually indefinite, liable to be discontinued.
3,137.50	1,568.75	.....	Aug. 25	Treaty Oct. 28, 1867, art. 1, 15 Stats., 593.	See L. A. Allen.
150.00	.....	150.00	Dec. 5	Treaty Oct. 21, 1867, 15 Stats., 581.	See J. H. Crane.
630.00	155.00	.....	Dec. 12	.....do	Do.
370.00	.....	370.00	Dec. 12	.....do	Do.
692.00	692.00	.....	Apr. 7	Treaty Dec. 30, 1849, art. 4, 9 Stats., 984.	See Thomas Knott.
825.00	.....	825.00	Oct. 29	Treaty Sept. 17, 1851, revised treaties 1047.	See J. L. Allen, above.
42.00	25.00	.....	Mar. 12	Treaty Feb. 27, 1855, art. 8-10, 10 Stats., 1172.	Interest on $804,909.17; Stats., 7, p. 545, Stats., 12, p. 628; also $44,162.47, annual interest on $78,340.41, Stats. 16, p. 355.
			1886		
3,735.00	.....	3,735.00	Dec. 29	Treaty Oct. 17, 1865, 14 Stats., 713.	See L. A. Allen.
			1887		
1,000.00	600.00	.....	Aug. 26	Treaty Aug. 19, 1868, art. 1, 15 Stats., 593.	Do.
2,400.00	1,200.00	.....	Feb. 18	Treaty Mar. 17, 1866, art. 1, 14 Stats., 747; treaty Aug. 25, 1868, art. 1, 15 Stats., 655.	See J. L. Allen.
5,200.00	.....	5,200.00	Aug. 25	Treaty Sept. 9, 1849, 9 Stats., 974.	No treaty fund.
5,005.00	2,500.00	(†)	Nov. 29	Treaty Oct. 28, 1865, 14 Stats., 747.	See J. L. Allen, above.
3,120.00	.....	3,120.00	Nov. 17	Treaty Apr. 29, 1868, 15 Stats., 635; treaty Oct. 28, 1867, 15 Stat., 593.	See William Baker.
1,250.00	625.00	(†)	Nov. 29	Treaty, same as No. 1187	See J. L. Allen.
1,000.00	500.00	(†)	Nov. 16	.....do	Do.
4,000.00	2,000.00	(†)	Nov. 26	Treaty Oct. 14, '65, art. 1, 14 Stats., 703.	See L. A. Allen.
1,625.00	825.00	(†)	Nov. 29	Treaty, same as 1187	See J. L. Allen.
7,631.00	4,025.00	(†)	Nov. 26	.....do	Do.

*No right to recover, as was on Indian soil. † Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
2856	Lemmon, James H., Thayer County, Nebr.	Horses, crops, etc	Cheyenne and Sioux.	1864–1865	June 22, '82
2327	Levens, Daniel A., Douglass County, Oregon.	Mules, cattl, etc ..	Rogue River and Cow Creek.	Oct. 23, '55	Mar., 1856
1860	Levy, Davis, Boise City, Idaho.	Groceries, etc.....	Bannock.....	May 29, '78	Mar. 27, '80
3194	Lindley, B., Salem, Ark.....	3 steers	Cherokee	Sept. 1, '76	Feb. 13, '84
1475	Lindley, Joseph M., Gallatin County, Mont.	1 plow, 1 stove, etc.	Crow	Aug. 21, '74	Dec. 22, '74
2320	Longmire, James, Olym-Wash.	Horses, gun, etc..	Nisqually.....	Oct. 29, '55 Apr. 1, '56	1856 1861
7371	Lopez and Son, Francisco, Las Vegas, N. Mex.	Mules.....	Cheyenne.....	May 15, '70	June 27, '74
1334	Lonergan, P. J., Keith County, Nebr.	Horses.....	Sioux.....	Mar. 14, '73	Apr. 6, '74
1040	Loving, James C., Jackson, Tex.	....do	Kiowa and Comanche.	In 1871	Apr. 9, '72
1275	Loving, James C., Jack County, Tex.	Horses and mules	Comanche.....	May 11 '72	Dec. 2, '73
1603	Loving, James C., Parker County, Tex.	Horses.....	Cheyenne.....	Oct. 13, '72	Dec. 17, '75
1633	Lowry, John, Manti, San Pete County, Utah.	....do	Utah	In 1875	Apr. 19, '76
724	Lujan, Pedro Gonzalez y., Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
900	Luna, Antonio José, Valencia County, N. Mex.	Mules, horses.....	Cheyenne.....	Aug., 1868	Feb. 28, '71
1402	Luna, José Ignaci. de, Mora County, N. Mex.	Sheep.....	Gila Apache	Nov., 1862	Sept. 4, '74
394	Luna, Ramon, Valencia County, N Mex.	Mules	Cheyenne.....	Oct. 10, '70	Feb. 13, '71
1419	Lusero, Visente Ferrel, Mora County, N. Mex.	2 horses.....	Jicarilla Apache..	Sept. 3, '67	Nov. 27, '74
1063	Malnourie, Charles, Fort Berthold, Dak.	2 mules	Yanct. Sioux.....	May, 1869	Jan. 11, '70
1728	Maple, Eli B., King County, Wash.	Potatoes, hogs, etc.	Puyallup and Klickitat.	Jan. 26, '56	1856
1478	Marksberry, G. P., Florissant, Colo.	1 pony	Ute	1874	Jan. 8, '75
1596	Martin Asher, Elk County, Kans.	6 mules	Cheyenne.....	June, 1867	Nov. 4, '75
1387	Martin Guadalupe, San Miguel County, N. Mex.	2 horses.....	Kiowa	Aug. 15, '63	Aug. 8, '74
1444	Martinez Antonio, San Miguel County, N. Mex.	Horses, etc	Navajo	May 12, '61	Aug. 17, '74
1421	Martinez José Rafael, San Miguel County, N. Mex.	Horses.....	....do	May 1, '62	Aug. 19, '74
1429	.....do	Horses and mules.	....do	Mar. 11, '59	Aug. 17, '74
1430	.....do	Sheep, donkeys ...	....do	Oct. 12, '64	Aug. 17, '74
1443	Martinez Romualdo, San Miguel County, N. Mex.	5 horses, etc	....do	Feb. 15, '70	Aug. 17, '74
1584	.....do	20 burros	Ute	Mar. 10, '65	Aug. 17, '75
1076	Martinez Romulo, Santa Fé County, N. Mex.	100 oxen, 17 horses	Apache and Kiowa	Dec., 1867	Aug. 7, '72
1254	Maxwell, Lucien B., Taos County, N Mex.	Sheep.....	Arapahoe.....	Mar., 1855	Apr. 1856
306	Mayer, Leopold, Saguache County, Colo.	Horses, oxen	Kiowa	Sept., 1869	Apr. 2, '61
1418	Medina, Fran'co, Mora County, N. Mex.	Horse and mare...	Jicarilla Apache..	Sept., 1867	Nov. 27, '74
722	Medina, José Maria, Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
1499	Meloche, Toney, Colfax County, N. Mex.	Horses.....	Cheyenne.....	July 5, '74	Jan. 28, '75
1731	Mercer, Thomas, Seattle, Wash.	Cow, potatoes, etc.	Puyallup and Klickitat.	In 1856....	1856

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$2,700.00	.....	$2,700.00	Mar. 8	Treaty Feb. 18, '61, 12 Stats., 1163; treaty Laramie, 51 Indian laws, 317.	See William Baker.
1,035.00	$575.00	.....	Oct. 21	Treaty Sept., 1853, art. 6, 10 Stats., 1018-1827.	No treaty fund.
927.65	927.65	.....	Oct. 29	Treaty July 3, '68, art. 1, 15 Stats., 673.	Eleven installments of $5,000; Stats. 15, p. 676.
150.00	.....	150.00	Oct. 17	Treaty Apr. 27, 1868, 16 Stats., 727.	Interest on trust fund $132,488.67 annually.
70.00	.....	70.00	Jan. 3	Treaty May 7, 1868, 15 Stats., 649.	See James Gemmell.
934.50	544.50	.....	June 30	Treaty Dec. 26, '1854, art. 8, 10 Stats. 1132.	No treaty fund.
.....	130.00	(*)			
4,400.00	2,750.00	(*)	June 2	Treaty Aug. 25, 1868, art. 1, 15 Stats., 655.	See L. A. Allen.
520.00	.....	520.00	Jan. 25	Treaty Oct. 10, 1865, 14 Stats., 695.	See J. L. Allen.
6,600.00	3,510.00	.....	Aug. 24	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581.	See J. H. Crane.
2,175.00	2,115.00	.....	Aug. 24	Treaty Aug. 15, 1868, art. 1, 15 Stats., 581.	Do.
2,360.00	2,015.00	(*)	Sept. 6	Treaty Aug. 19, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
3,620.00	1,760.00	.....	Aug. 30	Treaty Mar. 2, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
2,600.00	100.00	.....	May 12	Treaty June 1, 1868, art. 1, 15, Stats. 667.	No treaty fund.
18,200.00	9,850.00	.....	Oct. 29	Treaty Oct. 28, 1867, art. 1, 15 Stats., 593.	See L. A. Allen.
17,572.00	3,996.00	(*)	Nov. 23	Treaty July 1, 1852, art. 3, 10 Stats., 979.	No treaty fund.
9,900.00	.....	9,900.00	Nov. 3	Treaty Oct. 14, 1865. 14 Stats., 713.	See L. A. Allen.
200.00	200.00	(*)	Aug. 26	Treaty March 25, 1853, arts. 1-3, 10 Stats., 979.	No treaty fund.
400.00	.....	400.00	Aug. 23	Treaty April 29, 1868, 15 Stats., 635.	See J. L. Allen.
387.37	357.62	.....	Feb. 28	Treaty April 10, 1855, art. 8, 10 Stats., 1132.	No treaty fund.
45.00	.....	45.00	Oct. 22	Treaty Sept. 13, 1873, 18 Stats., 36.	See Thomas Knott.
1,200.00	900.00	(*)	Mar. 18	Treaty Oct. 28, 1867, art. 1, 15 Stats., 593.	See L. A. Allen.
300.00	200.00	(*)	Aug. 26	Treaty July 27, 1853, 10 Stats., 1013.	See J. H. Crane.
1,090.00	790.00	(*)	Aug. 26	Treaty Sept. 24, 1850, art. 3, 9 Stats., 974.	No treaty fund.
2,280.00	1,140.00	(*)	Oct. 29	Treaty same as No. 1444.	Do.
1,160.00	780.00	(*)	Oct. 29	.....do	Do.
894.00	728.50	(*)	Oct. 29	.....do	Do.
510.00	510.00	(*)	Aug. 26	Treaty Aug. 12, 1868, art. 1, 15 Stats., 667.	Do.
500.00	300.00	(*)	July 5	Treaty Sept. 9, 1850, arts. 1, 2, 4, 9 Stats., 984.	See Thomas Knott.
4,100.00	4,050.00	(*)	Sept. 13	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581-9.	Apaches no treaty funds; Kiowa, see C. L. Carter.
10,400.00	4,200.00	.....	Jan. 31	Treaty Laramie Sept. 17, 1851, Indian laws, 317.	See L. A. Allen.
4,650.00	.....	4,650.00	Aug. 22	Treaty July 27, 1853, 10 Stats., 1013.	See J. H. Crane.
200.00	200.00	(*)	Aug. 26	Treaty July 1, 1852, art. 2, 3, 10 Stats., 979.	No treaty fund.
300.00	120.00	.....	Apr. 25	Treaty June 1, 1868, art. 1, 15 Stats., 667.	Do.
2,100.00	1,400.00	.....	Mar. 31	Treaty Oct. 28, 1867, art. 1, 15 Stats., 593.	See L. A. Allen.
267.00	.....	267.00	Feb. 12	Treaty Apr. 10, 1855, 10 Stats., 1133.	No treaty fund.

* Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1518	Merravale, José, Albany County, Wyo.	Mules	Sioux and Cheyenne	In 1869	Jan. 29, '75
868	Mestes, Jino, Rio Arriba County, N. Mex.	1 horse	Navajo	In 1869	Jan. 14, '71
2870	Metcalf, Merritt E., Nebraska.	Cattle, horses, groceries, provisions, etc.	Cheyenne and Sioux.	Aug., 1864	June 22, '82
3282	Mille Lac Improvement Company, Hennepin County, Minn.	Dam destroyed	Mille Lac band of Chippewas.	Sept., 1883	Mar., 1884
775	Mitchell, David T., Jackson County, Mo.	Ponies	Osage	1867, 1868	July 3, '69
2347	Montolla, Juan, Socorro County, N. Mex.	Horses, oxen	Apache	Feb. 20, '53	Dec. 20, '54
1973	Montoya & Sons, E., Socorro County, N. Mex.	Horses and mules.	Mescalero Apache	June 9, '79 Mar. 12, '80	June 17, '80 .....
1452	Montoya, Joaquin, San Miguel County, N. Mex.	Sheep, provisions, etc.	Navajo	June 17, '67	Dec. 9, '74
1453	.....do	Horses, mules, etc.	....do	May 10, '64	Dec. 9, '74
1460	.....do	Oxen, cows, etc.	....do	Apr. 10, '52	Dec. 9, '74
2350	Montoya, José Antonio, Bernalillo County, N. Mex.	1 mule	....do	Dec. 24, '53	Dec. 20, '54
2806	Montoya, José A., San Antonio, N. Mex.	1,500 sheep	Apache	May 22, '80	Dec. 15, '81
1396	Montoya, José Maria, San Miguel County, N. Mex.	Horses, cows, etc.	Mescalero Apache	July 29, '60	Aug. 17, '74
2349	Montoya Vincente, Bernalillo County, N. Mex.	1 mare, 3 oxen	Navajo	Sept. 20, '52	Dec. 20, '54
2848	Moore, James A., and C. A., Welde County, Colo.	Horses and cattle.	Sioux and Cheyenne.	1864, 1865	June 22, '82
1196	Moore, James A., Cheyenne, Wyo.	Horses, mules, colts.	Sioux	Dec. 25, '68	Mar. 8, '73
1350	Moran Narcisse, Whetstone Agency.	Mules and horses.	Minn. Sioux	Apr. 12, '73	May 7, '74
500	Morin or Moran Narcisse, Fort Laramie, Dak.	Horses and cattle.	Sioux	In 1865	July 6, '66
2343	Morris Gouverneur, of the United States Army.	2 mules, 1 cow	Apache	Fall of 1852	May 4, '53
1416	Morris, W. K., Goodwill Station, Dak.	2 horses	Sisseton and Wahpeton Sioux.	Sept., 1874	Nov. 21, '74
516	Morrow, John A., Lincoln County, Nebr.	Cattle, horses, hogs, etc.	Cheyenne and Sioux.	Aug., 1864	Oct. 31, '67
1730	Moss, John J., Seattle, Wash.	1 dwelling, tools, etc.	Puyallup Dwamish, and other.	In 1856	In 1857
1516	Mousseau, M. A., Shannon County, Dak.	Horses	Sioux	July 15, '64	Jan. 27, '75
1515	Mousseau, M. A., Pine Ridge Agency.	Horses and mule	....do	May, 1861	Jan. 29, '75
719	Munis, José Miguel, Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
152	Munkers, Benjamin F., Morris County, Kans.	1 cow	Kaw	Oct., 1863	Mar. 19, '64
673	Murphy, Joseph, Choteau County, Mont.	1 mule	Piegan	Feb., 1869	Mar. 26, '69

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$1,800.00	$1,190.00	(*)	May 31	Treaty May 10, 1868, art. 1, 15 Stats., 655; treaty Apr. 29, 1868, art. 1, 15 Stats., 635.	See William Baker.
100.00	.....	$100.00	Jan. 24	Treaty June 1, 1868, 15 Stats., 667.	No treaty fund.
13,653.00	500.00	(*)	Feb. 26	Treaty of Laramie, 1851, Ind. laws, 317; treaty Feb. 18, 1861, 12 Stats., 1163.	See William Baker.
1,250.00	150.00	.....	May 26	Treaty Feb. 22, 1855, art. 9, 10 Stats., 1165.	See W. J. Hazen.
298.00	50.00	.....	April 6	Treaty Sept. 29, 1865, art. 10, 14 Stats., 687.	See William Carl, jr.
400.00	.....	400.00	Oct. 20	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
6,770.00	.....	6,770.00	Nov. 2	Treaty July 27, 1853, 10 Stats., 1013.	Do.
250.00	.....	250.00	Mar. 7	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
735.00	465.00	(*)	Aug. 25	Treaty same as No. 1452, art. 3.	Do.
450.00	.....	450.00	Mar. 3	Treaty same as No. 1452.	Do.
300.00	.....	300.00	Oct. 20	Treaty same as No. 1452.	Do.
1,500.00	.....	1,500.00	Nov. 5	Treaty July 1, 1852, 10 Stats., 979.	Do.
4,270.00	3,655.00	(*)	Nov. 26	Treaty July 1, 1852, art. 3, 10 Stats., 979.	Do.
115.00	115.00	.....	Oct. 21	Treaty Sept. 9, 1849, arts. 1 and 2, 9 Stats., 974.	Do.
44,735.00	17,734.00	(*)	Oct. 10	Treaty Dec. 5, 1861, art. 2, 12 Stats., 1163; treaty Sept. 17, 1851, art. 4, Revised Treaties, 1047.	See William Baker.
17,330.00	10,240.00	(*)	Aug. 25	Treaty Mar. 17, 1866, arts. 1 and 4, 14 Stats., 747.	See J. L. Allen.
1,000.00	.....	1,000.00	Oct. 29	Treaty Oct. 10, 1865, 14 Stats., 695.	Do.
6,800.00	.....	6,800.00	June 1	Treaty Sept. 17, 1851, Revised Treaties, 1047.	Do.
175.00	.....	175.00	Oct. 17	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
125.00	125.00	.....	Aug. 25	Treaty Mar. 31, 1859, and by art. 6 of treaty of May 2, 1867, 12 Stats., 1037, 15 Stats., 505.	See J. L. Allen.
31,840.00	.....	31,840.00	Feb. 9	Treaty Feb. 18, 1861, 13 Stats., 1163; treaty of Laramie, 1851, Indian Laws, 317.	See William Baker.
339.35	339.35	.....	Feb. 26	Treaty Dec. 16, 1854, 10 Stat., 1132.	No treaty fund.
800.00	.....	800.00	Oct. 29	Treaty Sept. 17, 1851, Revised Treaties, p. 1047.	See J. L. Allen.
1,800.00	1,220.00	(*)	Nov. 17	Treaty same as No. 1516.	Do.
150.00	100.00	.....	Apr. 19	Treaty June 1, 1868, art. 1. 15 Stats., 667.	No treaty fund.
30.00	.....	30.00	Mar. 1	Treaty Mar. 16, 1863, 12 Stats., 1221.	Interest on $200,000, Stats. 9, p. 842.
150.00	100.00	.....	Apr. 19	Treaty Oct. 17, 1855, arts. 11 and 12, 11 Stats., 657.	No treaty fund.

* Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
2364	Mynatt, Carreck S., Douglas County, Oregon.	Dwelling, property of various kinds.	Rogue River	Oct. 23, '55	Mar. 1885
3146	McBean, John, Umatilla Agency, Oregon.	Horses	Bannock or Snake	July 5, '78	Dec. 29, '83
1923	McCall, John, Scott County, Minn.	1 ox, expenses, etc	Lake Calhoun band of Sioux.	In 1885	1856
2929	McCargar, Alfred, Routt County, Colo.	Horses, wagons, merchandise.	White River Utes	Sept. 29, '79	Mar. 27, '83
2811	McCoy, Nancy J., Pendleton, Oregon.	Mules and harness, etc.	Bannock and Pi Ute.	In 1878	Jan. 11, '82
2366	McCullough, William, Douglas County, Oregon.	1 mule and property.	Cow Creek	Dec. 1, '55	Mar. 1858
2889	McGlinn, Thomas, Franklin County, Kans.	30 head of cattle	Osage	Winter of 1865.	Oct. 24, '82
2344	McGowan, Timothy, Santa Fé, N. Mex.	Corn, tobacco, etc	Gila Apache	Dec. 1853	In 1855
2951	McKee, Joel, Palo Pinto County, Tex.	Horses	Comanche	In 1860	Oct. 2, '83
2580	McKissick, Joseph, Clallam County, Wash.	1,000 rails	Skallam	Mar., Apr., 1859.	Not on record.
1729	McNatt, Francis, King County, Wash.	House, barn, and tools.	Puyallup *et al.*	1856	1857
1573	Nall, J. T., Saguache County, Colo.	2 horses	Ute	Aug. 18, '74	Aug. 5, '75
1438	Naranjo Francisco, San Miguel County, N. Mex.	Horse, saddle, etc.	Navajo	July 13, '61	Aug. 17, '74
1437	..... do	Mare and jack	....do	1853	1874
2371	Naylor, Granville, Jackson County, Oregon.	Oxen, blankets, etc.	Rogue River	Sept. 25, '55	Dec. 1857
1883	Neison, John, Pierce County, Wash.	Dwelling, furniture, provisions, etc.	Nisqually and Puyallup.	1855 and 1856.	May 3, '80
877	Nelson, Robert M., Benton County, Ark.	Cattle	Osage	Feb. 25, '70	Jan. 25, '71
2374	Newland, Martin W., Douglas County, Oregon.	House, tools, clothing.	Rogue River and Cow Creek.	Nov. 1855	Mar. 1858
1300	Nixon, James H., administrator John Nixon, deceased, Gallatin County Mont.	Killing of John Nixon. Horses, blankets, etc.	Sioux and Arapahoe.	July 24, '71	Feb. 19, '74
1631	Noper, Louis, Phillips County, Kans.	Hay, corn, etc	Omaha	Oct. 6, '73	Apr. 5, '76
1778	O'Brien, N. J., Laramie, Wyo.	Hay, horses, etc	Sioux	Dec. 18, '67, Apr. 8, '68	July 17, '78
1723	O'Flinn, James, Lewis County, Wash.	1 mare and colt	Nisqually	Nov. 1855	Jan., 1857
1340	Ortega, Albino, Las Vegas, N. Mex.	32 oxen	Gila Apache	Jan. 18, '70	Apr. 11, '74
1338	Owen, Thomas E., Las Animas, Colo.	Horses and mule	Arapahoe	Sept. 26, '72	Apr. 11, '74
1362	Owens, George, Fort Parker, Mont.	Horses, etc	Bannock	1872	1874
1719	Ownby, Nicholas, Jesse, and Powell, Benton County, Oregon.	Hogs	Rogue River and Cow Creek.	Autumn, 1885.	Sept. 1858
1345	Pace, William F., Spanish Fork City, Utah.	2 horses	Ute	Aug. 31, '72	Apr. 28, '74
2391	Packwood, W. H., Coos County, Oregon.	Horse	Rogue River	1856	1857
354	Parker, Thomas. Colorado	25 tons hay	Mohuache Utes	Oct. 25, '65	Mar. 14, '66
173	Parks, Samuel B., Dodge County, Nebr.	Tent, cow, calf, steer, etc.	Pawnee	June 29, '59	1859, 1863
1767	Patton, W. L., Albany County, Wyo.	3 horses	Arapahoe	Nov., 1871, and Sept. '72.	June 28, '78
1284	Payne, Rufus, Gallatin County, Mont.	2 horses	Teton Sioux	July 24, '71	Jan., 1874
2396	Percival, Robert C., Douglas County, Oregon.	House, oxen, wheat, etc.	Rogue River and Cow Creek.	Oct. 22, '55	May 14, '58
1481	Perea, José Armijo y, Bernalillo County, N. Mex.	Horses and oxen.	Navajo	June 11, '57	Jan. 15, '75

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$7,580.50	.....	$7,580.50	Oct. 24	Treaty Sept. 10, 1853, 10 Stats., 1018–1027.	No treaty fund.
200.00	$200.00	.....	June 8	Treaty Feb. 24, 1869, art. 1, 15 Stats., 627.	See Davis Levi.
120.35	70.00	.....	Oct. 14	Treaty Sept. 17, 1851, art. 4, 11 Stats., 749.	See J. L. Allen.
3,863.50	1,115.50	.....	Jan. 31	Treaty Nov. 6, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
984.00	738.00	.....	July 11	Treaty July 3, 1868, art. 1, 15 Stats., 673.	See Davis Levi and Thomas Knott.
500.00	200.00	.....	Oct. 17	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1027.	No treaty fund.
1,200.00	900.00	(*)	Sept. 5	Treaty Aug. 13, 1809, art. 9, 7 Stats., 108.	See William Carl, jr.
10,755.00	.....	10,750.00	Oct. 20	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
14,200.00	9,960.00	(*)	June 1	Treaty July 27, 1853, art. 4, 10 Stats., 1013.	See J. H. Crane.
40.00	.....	40.00	Mar. 15	Treaty Jan. 1, 1855, 12 Stats., 233.	No treaty fund.
1,740.50	1,000.00	.....	Feb. 28	Treaty Dec. 26, 1854, art. 7, 10 Stats., 1152.	Do.
225.00	75.00	.....	Oct. 29	Treaty Mar. 2, 1868 art. 6, 15 Stats., 619.	See Thomas Knott.
225.00	130.00	(*)	Dec. 5	Treaty Sept. 9, 1849, art. 1, 9 Stats., 974.	No treaty fund.
145.00	120.00	(*)	Dec. 12	.... do	Do.
398.62½	398.62	.....	Apr. 6	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1018.	Do.
720.58	658.50	(*)	Feb. 18	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1133.	Do.
1,250.00	340.00	.....	Aug. 23	Treaty Jan. 21, 1867, art. 10, 14 Stats., 687.	See William Carl, jr.
340.00	340.00	.....	Oct. 14	Treaty Feb. 5, 1855, art. 6, 10 Stats., 1027.	No treaty fund.
5,000.00 615.00	414.00	.....	Feb. 28	Treaty Apr. 25, 1868, 14 Stats., 747; 15 Stats., 655.	See William Baker.
40.00	.....	40.00	Aug. 26	Treaty Mar., 16, 1865, 14 Stats., 667.	Six installments of $10,000 each, 10 Stats., p. 1044, sec. 4.
4,905.00	.....	4,905.00	May 19	Treaty Oct. 28, 1865, 14 Stats., 747.	See J. L. Allen, above.
103.00	.....	103.00	Feb. 26	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
1,000.00	960.00	(*)	Jan. 15	Treaty July 1, 1852, art. 4, 10 Stats., 979.	Do.
650.00	380.00	.....	Jan. 12	Treaty Aug. 19, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
635.50	.....	635.50	Dec. 14	Treaty July 3, 1868, 15 Stats., 673.	See O. A. Barton.
5,250.00	.....	5,250.00	Nov. 26	Treaty Sept. 10, 1853, 10 Stats., 1018–1027.	No treaty funds.
225.00	125.00	.....	Jan. 18	Treaty Mar. 2, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
200.00	.....	200.00	Dec. 16	Treaty Sept. 10, 1853, 10 Stats., 1018.	No treaty funds.
750.00	.....	750.00	Feb. 16	Treaty Oct. 7, 1863, 13 Stats., 673; treaty Mar. 2, 1868, 15 Stats. 619.	See Thomas Knott.
812.25	.....	812.25	Mar. 5	Treaty Sept. 24, 1853, 11 Stats., 729.	Annuity of $47,100, 11 Stats, pp. 729 and 730.
375.00	.....	375.00	Apr. 9	Treaty May 10, 1868, 15 Stats., 655.	See L. A. Allen.
200.00	200.00	.....	July 8	Treaty Sept 17, 1857, art. 4, R. T., 1047.	See J. L. Allen.
1,400.00	751.00	.....	Oct. 29	Treaty Nov. 15, 1854, art. 6, 10 Stats., 1119.	No treaty fund.
625.00	.....	625.00	Aug. 24	Treaty Sept. 24, 1850, 9 Stats., 974.	Do.

* Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed	Indians charged with depredations.	When committed.	When filed.
1319	Peterson, Nils, Harlan County, Nebr.	2 horses	Pawnee	Apr. 15, '71	Mar. 23, '74
1707	Pierce, John, Beaver Head County, Mont.	Horses, mules, groceries.	Nez Percé	Aug. 12, '77	Mar. 12, '78
1706	Pierce, Thomas, Beaver Head, Mont.	Horses, clothing	do	Aug. 12, '77	Mar. 12, '78
1735	Pierce, Thomas, Skamania County, Wash.	Horses, damage to crops.	Klickitat	1855, 1866	In 1856
1659	Pooler, Robert L., Las Animas County, Colo.	Horses	Sioux	June, 1875	July 27, '76
728	Prada, Epifanio, San Ildefonso, N. Mex.	Stock	Navajo	June 8, '69	July 28, '69
2385	Price, William R., Missouri City, Mo.	15 mules	Kiowa and Comanche.	May, 1865	In '67, and Sept. 22, '87
1226	Probst, August, and Kirchner, Charles, Santa Fé, N. Mex.	5 horses	Ute	Mar. 22, '72	May 22, '73
1489	Pulliam, James, Laramie County, Wyo.	Mules, cattle, provisions, etc.	Ogalalla Sioux	Mar. 19, '68	Jan. 23, '75
1809	Raymond Brothers, Madison County, Mont.	Horses	Bannock	Aug., 1878	May 26, '79
1285	Rea, William, Gallatin County, Mont.	2 horses	Teton Sioux	July 24, '71	Jan., 1874
1468	Reed, Alfred, Montague County, Tex.	do	Kiowa and Comanche.	Apr., 1872	Dec. 18, '74
2790	Renquist, Peter, Pierce County, Wash.	Potatoes, flour, vegetables, etc.	Yakima, Puyallup, *et al.*	In 1855	June 10, '81
1601	Richards, Hugh T., Lawrence, Kans.	5 head cattle	Cheyenne	Sept. 15, '74	Dec. 17, '75
177	Richard, John, Laramie County, Wyo.	35 horses, 5 mules.	Blackfeet Sioux	Mar., 1855	May 26, '68
523	Richard, sr., John, Fort Laramie, Dak.	121 horses	Utah	July 4, '64	Nov. 2, '67
1023	Richard, John, Fort Laramie, Dak.	65 horses	Kiowa	Aug. 18, '60	Oct., 1872
1095	Richard, jr., John, deceased, Laramie County, Wyo.	Groceries, tobacco, etc.	Ogalalla Sioux	Aug. 2, '68	Oct. 7, '72
1201	Richard, sr., John, deceased, Laramie County, Wyo.	4 mules, 5 horses.	Sioux	Apr. 20, '72	Mar. 8, '73
2401	Richardson, J. B., officer in United States Army.	Horses, etc	Apache	1852	Oct. 1, '58
1366	Rickly, John, for the heirs of Caroline Rickly, Columbus, Nebr.	40 cords wood	Pawnee	1873, 1874	June 18, '74
1636	Rickly, John, for the heirs of Caroline Rickly, Platte County, Nebr.	Timber destroyed.	Omaha	Sept., 1874; Mar., 1875	Apr. 26, '76
1473	Rivera, Gabriel, El Pueblo, San Miguel County, N. Mex.	Oxen, horse, mule, etc.	Navajo	Aug., 1862	Dec. 21, '74
1344	Rockhill, W. W., Spanish Fork City, Utah.	1 horse	Ute	Aug. 31, '72	Apr. 28, '74
1455	Romero, Ramon, San Miguel County, N. Mex.	15 cows, provisions.	Navajo	Apr. 10, '66	Dec. 9, '74
1456	do	Cows, horses, mule, ass.	do	June 7, '62	Dec. 9, '74
1705	Rosecrans, L. H., Fort Benton, Mont.	Harness, etc	Nez Percé	Sept. 26, '77	Mar. 15, '78
1549	Rouse, John H., Bon Homme County, Dak.	6 horses, 1 cow	Brulé Sioux	Oct., 1871	Apr. 17, '75
1741	Rowland, William, Laramie County, Wyo.	Horses, cattle, cows, etc.	Sioux	1859, '65, '67, '72.	May 16, '78
485	Rowland, William Y., Custer County, Mont.	4 horses	do	June 25, '65	Feb., 1887

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1886.		
$300.00	$250.00	.....	Dec. 31	Treaty May 26, 1858, art. 5, 14 Stats., 729.	Annuity of $47,100, 11 Stats., pp. 729 and 730.
			1887.		
1,410.50	1,006.50	.....	July 13	Treaty June 11, 1855, art. 8, 12 Stats., 957; treaty June 9, 1863, art. 8, 14 Stats., 647.	No treaty fund.
935.00	445.00	.....	Feb. 9	Treaty Apr. 29, 1859, art. 8, 12 Stats., 957.	Do.
1,725.00	630.00	.....	Feb. 21	Treaty June 9, 1855, art. 8, 12 Stats., 951.	Do.
5,425.00	3,710.00	.....	Aug. 25	Treaty Sept. 17, 1851, Rev. T's., 1047.	See J. L. Allen.
100.00	50.00	.....	May 19	Treaty June 1, 1868, art. 8, 15 Stats., 667.	No treaty fund.
3,750.00	2,625.00	.....	Oct. 29	Treaty July 27, 1853, 10 Stats., 1013.	See J. H. Crane.
900.00	370.00	.....	May 28	Treaty Nov. 6, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
6,650.00	.....	$6,650.00	Nov. 28	Treaty Oct. 28, 1865, 14 Stats., 747.	See J. L. Allen, above.
3,800.00	3,800.00	.....	June 27	Treaty July 3, 1868, art. 1, 15 Stats., 673.	See R. B. Hay.
600.00	300.00	.....	July 12	Treaty Sept. 17, 1851, Revised Treaties, p. 1047.	See J. L. Allen.
125.00	.....	125.00	Aug. 26	Treaty Oct. 21, 1867, 15 Stats., 581.	See J. H. Crane.
863.75	.....	863.75	May 16	Treaty Dec. 26, 1854, 10 Stats., 1132.	No treaty fund.
250.00	200.00	.....	Aug. 26	Treaty May 10, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
8,000.00	1,000.00	(*)	Jan. 25	Treaty Fort Laramie, 1851, Indian Laws, 317.	No treaty fund.
12,100.00	4,235.00	(*)	May 31	Treaty Sept. 9, 1850, art. 4, 9 Stats., 984.	See Thomas Knott.
6,500.00	.....	6,500.00	July 23	Treaty July 27, 1853, 10 Stats., 1013.	See J. H. Crane.
3,923.50	.....	3,923.50	July 5	Treaty Oct. 28, 1865, 14 Stats., 747.	See J. L. Allen.
1,100.00	.....	1,100.00	Jan. 15	Treaty Mar. 5, 1866, 14 Stats., 747.	Do.
400.00	60.00	(*)	Mar. 14	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
180.00	.....	180.00	Aug. 25	Treaty Sept. 24, 1857, 11 Stats., 729.	Annuity of $47,100, 11 Stats., pp. 729 and 730.
196.00	112.00	.....	Aug. 27	Treaty June 1, 1854, art. 10, Stats., 1043; treaty Feb. 15, 1866, 14 Stats., 667.	See Louis Noper.
1,110.00	780.00	(*)	Aug. 23	Treaty Sept. 9, 1849, art. 3, 9 Stats., 974.	No treaty fund.
150.00	125.00	.....	Jan. 15	Treaty Mar. 2, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
445.00	225.00	(*)	Aug. 26	Treaty Sept. 24, 1850, art. 3, 9 Stats., 974.	No treaty fund.
2,040.00	1,555.00	(*)	Aug. 23	Treaty same as No. 1455.	Do.
597.37	385.25	.....	Feb. 11	Treaty Oct. 17, 1855, art. 11, 11 Stats., 657; treaty June 9, 1863, art. 8, 14 Stats., 651.	Do.
650.00	490.00	(*)	Aug. 26	Treaty Oct. 14, 1865, art. 1, 14 Stats., 699.	See J. L. Allen.
8,015.00	.....	8,015.00	Sept. 30	Treaty 1851, Revised Treaties, p. 1047; treaty Oct. 28, 1865, 14 Stats., 747.	Do.
400.00	.....	400.00	Sept. 30	Treaty Sept. 17, 1851, Revised Treaties, 1047.	Do.

* *Barred.*

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1508	Sacha, Mrs. Minnie, a laundress, United States infantry.	1 cow	Sioux	Oct. 17, '72	Jan. 29, '75
1463	Sair, Juan Lorenzo, San Miguel County, N. Mex.	Sheep, horses, arms, provisions, etc.	Navajo	Dec. 5, '63	Dec. 7, '74
1550	Sais, Juan, San Miguel County, N. Mex.	Goats, horse, oxen, etc.	...do	Mar. 15, '63	Apr. 19, '75
1008	Salomon & Bro., F. L., Denver, Colo.	Flour	Cheyenne, Arapahoe, and Sioux.	1865	1872
2436	Sanchez, Jesus Maria, Taos County, N. Mex.	6 mares	Ute	Feb., 1854	Oct. 21, '54
723	Sanchez Manuel Lujan y, San Ildefonso, N. Mex.	Horses	Navajo	June, 1869	July 28, '69
1457	Sandoval, José Manuel, San Miguel County, N. Mex.	Goats, 2 horses	....do	Dec. 5, '63	Dec. 9, '74
2431	Sandoval, Josefa, Bernalillo County, N. Mex.	Cows, oxen, 1 horse.	....do	1846, 1851	Dec. 20, '54
1863	Sanford, D.A., Pima County, Ariz.	1 mule, 1 mare	Apache	Apr. 19, '77	Mar. 29, '80
3713	Sayer, Richard, Chase County, Kans.	Horse and damages.	Keechie and Wichita Indians.	Oct., 1867	Apr. 25, '69
1373	Serna, Vincente, Colfax County, N. Mex.	33 sheep	Jicarilla Apache	Oct. 14, '73	July 10, '74
1500	Service, Alonzo, Colfax County, N. Mex.	1 mare, with foal	Cheyenne	July 5, '74	Jan. 25, '75
1244	Sewell, Eli M., Pond Creek, Ind. T.	Stock	Kiowa	1872	1873
1059	Sharp, Hester O., Wilson County, Kans.	Cattle, wagon, clothing.	Ogalalla Sioux	July, 1864	June 28, '72
1267	Shaw, A. G., Laramie County, Wyo.	4 mules, etc., provisions.	Sioux	Mar., 1872; Apr., 1873.	Nov. 15, '73
1740	Shaw, Danl. S., Laramie County, Wyo.	Horses	Ogalalla and Brulé	Oct., 1876	May 14, '78
1602	Shearon, O. H., Wichita, Kans.	Wagon burned	Cheyenne	July 3, '74	Dec. 17, '75
1298	Shed, James T., Gallatin County, Mont.	4 horses	Sioux and Arapahoe.	July 24, '71	Feb. 19, '74
2444	Shelton, Levi, Thurston County, Wash.	Horses, flour, clothing.	Nisqually	Oct. 29, '55	In 1885
1299	Shepherd, W. H. H., Gallatin County, Mont.	Horse, saddle, bridle, gun, etc., killing son George.	Sioux and Arapahoe.	July 24, '71	Feb. 19, '74
689	Silva, Manuel, San Miguel County, N. Mex.	13 oxen	Mescalero Apache.	Jan., 1869	Apr. 12, '69
1486	Silver, Frank, Laramie County, Wyo.	3 horses	Minneconjou Sioux.	Sept. 9, '72	Jan. 23, '75
2863	Slusher, William, Hamburg, Iowa.	Mules and horses.	Sioux	In 1864	June 22, '82
2859	Smith, Daniel L., Kearney County, Nebr.	Cattle, horses, hogs, etc.	Sioux and Cheyenne.	Aug., 1864, May, 1865.	June 22, '82
2876	Smith, Frederick, Kearney County, Nebr.	Cattle, groceries, hardware, etc.	Cheyenne and Sioux.	Aug., 1864	June 22, '82
2648	Smith, Henry, Pierce County, Wash.	Vegetables, hardware, clothing, etc.	White River and Muckleshoot.	Mar., 1856	Feb. 14, '81
1678	Smith, Hiram, Benton County, Oregon.	Wagon, cattle, 1,200 pounds butter.	Rogue River and Cow Creek.	Oct. 23, '55	Sept., 1856
551	Smith, John S., Ottawa County, Kans.	2 mules	Cheyenne	June, 1867	Jan. 24, '68
1899	Smith Peter, Pierce County, Wash.	Potatoes, oats, hogs, etc.	Nisqually and Puyallup.	1855	1857

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$100.00	.....	$100.00	Nov. 23	Treaty 1851, Revised Treaties, p. 1047.	
1,315.00	$1,625.00	(*)	Oct. 29	Treaty Sept. 9, 1849, art. 3, 9 Stats., 974.	No treaty fund.
740.00	400.00	(*)	Aug. 26	Treaty same as No. 1463; art. 3.	Do.
11,400.00	8,108.48	(*)	Dec. 16	Treaty Sept. 17, 1851, art. 4, Revised Treaties, 1047.	See William Baker.
180.00	.....	180.00	Jan. 31	Treaty Dec. 30, 1849, 9 Stats., 984.	See Thomas Knott.
300.00	150.00	.....	Apr. 26	Treaty June 1, 1868, art 1, 15 Stats., 667.	No treaty fund.
261.00	163.00	(*)	Mar. 3	Treaty Sept. 24, 1850, art 3, 9 Stats., 974.	Do.
535.00	.....	535.00	Jan. 24	Treaty Sept. 9, 1849, 9 Stats., 974.	Do.
280.00	150.00	.....	Sept. 5	Treaty Mar. 5, 1853, arts. 1, 2, 3, 4, 10 Stats., 979.	Do.
345.00	110.00	.....	Mar. 24	Treaty Mar. 8, 1847, art. 2, 9 Stats., 844.	Do.
82.50	66.00	.....	Aug. 26	Treaty Mar. 17, 1866, art. 1, 14 Stats., 713.	Do.
200.00	125.00	.....	Aug. 24	Treaty Aug. 19, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
1,080.00	800.00	.....	Dec. 16	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581.	See J. H. Crane.
1,005.00	724.00	.....	Aug. 25	Treaty Laramie Indian Laws, p. 317.	See J. L. Allen.
993.65	.....	993.65	Jan. 3	Treaty Apr. 29, 1868, 15 Stats., 635.	Do.
2,750.00	2,100.00	.....	Aug. 26	Treaty Apr. 29, art. 1, 15 Stats., 635.	Do.
100.00	100.00	.....	Aug. 24	Treaty Aug. 9, 1868, art. 1, 15 Stats., 593.	See L. A. Allen.
415.00	290.00	.....	Apr. 7	Treaty Feb. 24, 1869, art. 1, 15 Stats., 635; treaty Aug. 25, 1868, art. 1, 15 Stats., 655.	See Wm. Baker.
545.50	275.00	.....	May 16	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.
(2,150.00, 3,000.00, 150.00)	150.00	.....	1886. Dec. 31	Treaty Aug. 25, 1868, art. 1, 15 Stats., 655; treaty Mar. 17, 1866, art. 1, 14 Stats., 747.	See Wm. Baker.
			1887.		
325.00	325.00	.....	Mar. 21	Treaty July 1, 1852, arts. 2, 3, 10 Stats., 979.	No treaty fund.
450.00	375.00	.....	Oct. 29	Treaty Apr. 29, 1868, art. 1, 15 Stats., 635.	See J. L. Allen.
1,200.00	745.00	(*)	July 11	Treaty Laramie, 1851, art. 4, Indian Laws, 317.	Do.
12,540.00	1,690.00	(*)	Apr. 5	Treaty Dec. 5, 1861, art. 2, 12 Stats., 1163; treaty Sept. 17, 1851, art. 4, Rev. T's, 1047.	See William Baker.
12,198.75	1,060.00	(*)	June 30	Treaty same as No. 2859.	Do.
1,100.00	678.50	(*)	May 16	Treaty Apr. 10, 1855, art. 8, 10 Stats., 1132.	No treaty fund.
3,678.75	.....	3,678.75	Nov. 28	Treaty Sept., 1853, 10 Stats., 1018–1027.	Do.
375.00	.....	375.00	Mar. 26	Treaty Oct. 17, 1865, 14 Stats., 713.	See L. A. Allen.
1,100.00	365.00	.....	Mar. 17	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.

*Barred.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
1634	Smith, William F., Whetstone Agency.	House burned and property destroyed.	Sioux	Oct., 1870	Apr. 11, '76
2448	Smithers, E. M., King County, Wash.	Dwelling, cattle, etc.	Puyallup and Klickitat.	Jan., 1856	In 1856
3718	Snow, Hester Ann, Mitchell County, Kans.	Household goods, clothing, provisions, etc.	Cheyenne and Arapahoe.	Aug., 1868	Mar. 14, '74
1395	Solano, Julian, San Miguel County, N. Mex.	Cows	Navajo	Mar., 1863	Aug. 15, '75
1349	Stapleton, R. H., Socorro, N. Mex.	1 mule	Southern Apache.	Aug. 1, '73	May 2, '74
1871	Storrs, George, Wright County, Minn.	Cattle, hogs, etc	Sioux	In 1862	Apr. 17, '80
1687	Story, Nelson, Bozeman, Mont.	14 mules, 2 horses	do	July 1875	May 24, '77
1571	Stowell, Stephen B., Russell County, Kans.	Horse, mule, bedding, etc.	Hostile Indians	Sept. 14, '74	July 29, '75
1578	Stuart, Samuel T., Fort Stanton, N. Mex.	Horses	Mescalero Apache.	Sept. 5, '73	Sept. 13, '75
2915	Taylor, Eugene, Routt County, Colo.	Houses, oats, provisions.	White River Utes.	Sept. 29, '79	Feb. 15, '83
1310	Thibadeau, Z. B., Oshkosh, Wis.	Shoes, clothing, gold, etc.	Flatheads	May, 1863	Oct. 29, '63
1744	Thompson, Frederick A., Bozeman, Mont.	Dentist's set of instruments, etc.	Nez Percé	Sept. 13, '77	May 12, '78
1570	Thompson, James L., Gove County, Kans.	Mule, hay, gun, and expenses.	Cheyenne	Sept. 14, '74	July 24, '75
1301	Thorp, P., Pratt, D., and Stanton, A. R., Gallatin County, Mont.	Horses and cattle.	Sioux and Arapahoe.	July 24, '71	Feb. 19, '74
3235	Fowler, Reuben, Atwater, Minn.	Crops destroyed	Sioux	1862	Apr. 9, '84
2481	Trujillo, Pablo, Guadalupita, N. Mex.	Horses	Jicarilla Apache	May 15, '54	Mar. 7, '60
1420	Trujillo, Seferino, Mora County, N. Mex.	8 horses	Mescalero Apache	June 27, '60	Nov. 27, '74
1625	Tuch, Frank, Knox County, Nebr.	1 yoke of oxen	Brulé Sioux	May, 1874	Dec. 15, '75
1052	Turgeon, Joseph, Albany County, Wyo.	Clothing, groceries, etc.	Cheyenne	June, 1867	June 2, '72
1610	Tuttle, S., Barbour County, Kans.	2 cows	Osage	June 20, '74	Jan. 3, '76
2869	Uhlig, Edmund H., Nuckolls County, Nebr.	Horses, cows, corn, improvements, etc.	Sioux and Cheyennne.	Aug. 9, '64	June 22, '82
1426	Ulibarri, Marcus, San Miguel County, N. Mex.	Cows, oxen, horses.	Kiowa	May, 1872	July 23, '74
725	Valdez, José María, Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
1341	Valencia, Bernardo, Anton Chico, N. Mex.	Cattle	Apache	Jan. 18, '70	Apr. 11, '74
357	Van Bremmer, Isaac, Huerfano County, Colo.	do	Mohuache band of Utah.	Bet. Ap. 25 and July 10, 1865.	Mar. 14, '66
681 / 3759	Vanderen, Richard H., Chase County, Kans.	1 horse	Keechie	Sept. 17, '67	Apr. 26, '69
2509	Vanderpool, F. M., Skamania County, Wash.	Household and kitchen furniture.	Klickitat or Yakama.	Mar., 1856	1856
1529	Vaughan, L. W., Palo Pinto County, Tex.	Horses, clothing, etc.	Kiowa	July 9, '70	Feb. 5, '75
1530	Vaughn, R., Palo Pinto County, Tex.	Horses, oxen	do	July, 1870	Feb. 5, '75
2503	Vigil, Donanciano, San Miguel County, N. Mex.	1 horse	Jicarilla Apache	July 24, '59	Dec. 30, '59
717	Vigil, Faustin, Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
718	Vigil, José Miguel, Santa Fé County, N. Mex.	do	do	June, 1869	July 28, '69
721	Vigil, Manuel Antonio, Santa Fé, N. Mex.	do	do	June, 1869	July 28, '69

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
			1887.		
$700.00	.....	$700.00	Aug. 29	Treaty Apr. 29, 1868, 15 Stats., 635.	See J. L. Allen.
1,305.00	$787.00	.....	May 12	Treaty Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.
250.00	207.24	(*)	June 17	Treaty May 10, 1868, art. 1, 15 Stats., 655.	See L. A. Allen.
360.00	240.00	(*)	Dec. 12	Treaty Sept. 9, 1849, arts. 5, 9 Stats., 974.	
75.00	.....	75.00	Jan. 8	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
985.00	740.00	(*)	Feb. 15	Treaty June 19, 1858, art. 6, 12 Stats., 1037.	See J. L. Allen above.
2,250.00	2,000.00	.....	June 3	Treaty Apr. 29, 1868, art. 1, 15 Stats., 635.	Do.
550.00	550.00	(†)	Aug. 25	Treaty for Congress determination.	
300.00	.....	300.00	Aug. 26	Treaty July 27, 1853, 10 Stats., 1013.	No treaty fund.
2,500.00	1,146.60	.....	Jan. 31	Treaty Nov. 6, 1868, art. 6, 15 Stats., 619.	See Thomas Knott.
8,000.00	.....	8,000.00	Feb. 28	Treaty Oct. 17, 1855, 11 Stats., 657.	No treaty fund.
837.35	500.00	.....	Nov. 26	Treaty June 11, 1855, art. 8, 12 Stats., 957.	Do.
482.00	.....	482.00	Aug. 25	Treaty May 10, 1868, 15 Stats., 655.	See L. A. Allen.
2,740.00	430.00	.....	Jan. 5	Treaty Feb. 24, 1869, art. 1, 15 Stats., 635.	See William Baker.
918.90	707.50	.....	May 20	Treaty June 19, 1858, art. 6, 12 Stats., 1037.	See J. L. Allen, above
470.00	375.00	(*)	Apr. 6	Treaty July 1, 1852, art. 3, 10 Stats., 979.	No treaty fund.
1,260.00	800.00	(*)	Aug. 26	Treaty Mar. 25, 1853, arts. 1-3, 10 Stats., 979.	Do.
150.00	100.00	.....	Aug. 25	Treaty Apr. 29, 1868, art. 1, 15 Stats., 635.	See J. L. Allen.
5,144.00	3,429.34	(*)	July 8	Treaty Oct. 14, 1865, art. 1, 14 Stats., 703; treaty Oct. 28, 1865, art. 1, 14 Stats., 747.	See L. A. Allen.
83.00	.....	83.00	Aug. 26	Treaty June 5, 1872, 17 Stats., 228.	See William Carl, jr.
6,791.00	.....	6,791.00	Mar. 12	Treaty June 27, 1860, 12 Stats., 1042; treaty Feb. 18, 1861, 12 Stats., 1163.	See William Baker.
460.00	460.00	.....	Aug. 23	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581.	See J. H. Crane.
100.00	40.00	.....	May 12	Treaty June 1, 1868, art. 8, 15 Stats., 667.	No treaty fund.
3,000.00	1,800.00	(*)	Jan. 18	Treaty July 1, 1852, art. 4, 10 Stats., 979.	Do.
1,250.00	625.00	.....	Oct. 13	Treaty Dec. 30, 1849, art. 3, 9 Stats., 984.	See Thomas Knott.
85.00	.....	85.00	Mar. 21	Treaty May 15, 1846, 9 Stats., 844.	No treaty fund.
515.00	351.00	.....	Apr. 18	Treaty June 9, 1855, art. 8, 12 Stats., 915.	Do.
1,670.00	198.00	(*)	June 4	Treaty Aug. 25, 1868, art. 1, 15 Stats., 581.	See J. H. Crane.
2,295.00	610.00	(*)	May 31	Treaty Oct. 21, 1867, art. 1, 15 Stats., 581.	Do.
300.00	.....	300.00	Apr. 18	Treaty July 1, 1852, 10 Stats., 979.	No treaty fund.
425.00	260.00	.....	May 12	Treaty June 1, 1868, art. 1, 15 Stats., 667.	Do.
825.00	575.00	.....	Apr. 19	Treaty same as No. 717.	Do.
300.00	90.00	.....	May 12	....do	Do.

* Barred. † For Congress.

A list of depredation claims in favor of citizens of the United States

No.	Name of claimant and post-office address.	Property charged to have been stolen or destroyed.	Indians charged with depredations.	When committed.	When filed.
720	Vigil, Rafael Montez y, Santa Fé County, N. Mex.	Stock stolen	Navajo	June, 1869	July 28, '69
2504	Vigil, Ramon, Rio Arriba County, N. Mex.	Sheep, goats, horses.	....do	1859	Apr. 10, '80
1511	Walker, Lester, Lincoln County, Nebr.	3 horses	Sioux	May, 1871	Jan. 29, '75
1583	Waranja, José Demetrio, San Miguel County, N. Mex.	14 cows	Jicarilla	May 6, 1872	Aug. 17, '74
1064	Watts, John, San Miguel County, N. Mex.	4 horses, 1 mule	Navajo	June 22, '68, also in 1868	July 20, '72
3299	Westmeyer, Fred W., Gila County, Ariz.	Merchandise	Warm Spring	Apr. 19, '82	Aug. 3, '84
482	Whitcomb, E. W., Cheyenne, Wyo.	Horses, etc	Sioux	1864 and 1865.	1866, 1867
1138	Whitington, James H., Valencia County, N. Mex.	Mules and horses	Southern Apache	May, 1870	Dec. 15, '72
652	Widner, Christopher, Fort Larned, Kans.	Horses and mules	Arapaho and Cheyenne.	1868	1869
3777	Widner, Christopher, Piketon County, Kans.	Furniture, jewelry, etc.	Kiowa	1868	1869
1612	Wiggins, sr., Hiram H., Sumner County, Kans.	Horses, mules, etc	Osage	July 22, '74	Jan. 3, '76
1329	Wilcox, James, Las Animas County, Colo.	Horses	Cheyenne	Oct. 1, '72	Apr. 7, '74
1803	Willard, Sarah E., Grant County, Oregon.	....do	Pi Ute and Bannock.	July 30, '78	June 4, '79
2868	Williams & Co., Robert (Robert Williams and George Knox), Lincoln County, Nebr.	Horses, etc., and groceries.	Sioux and Cheyenne.	1864	June 23, '82
1534	Winnie, Abram, Barbour County, Kans.	Horses	Osage	Aug., 1874	Feb. 26, '75
1708	Winters, Daniel J., surviving partner of Montague & Winters, Beaver Head County, Mont.	Horses, blankets, etc.	Nez Percé	Aug. 12, '77	Mar. 28, '78
2874	Wisely, Joel F., a surgeon U. S. Army.	Clothing, library, etc.	Sioux and Cheyenne.	Jan. 7, '65	June 22, '83
1882	Woolery, Abram H., Pierce County, Wash.	House, vegetables, etc.	Nisqually and Puyallup.	Oct. 15, '55	1857
1873	Woolery, Isaac, Pierce County, Wash.	House furniture, etc.	Puyallup and Nisqually.	Oct. 1, '55	1857
1546	Woolridge, William H., Brown County, Tex.	Horses, damages	Comanche	June 10, '72	Mar. 26, '75
530	Woolworth & Moffat (C. C. Woolworth and D. H. Moffat), Denver, Colo.	Stationery, etc	Cheyenne	Aug. 8, '64	Nov. 29, '67
1907	Wright, B. F., Pierce County, Wash.	Hogs, chickens, vegetables.	Puyallup, Nisqually, and others.	1855, 1856	1857
1605	Wright, George W., Carbon County, Wyo.	Horses	Arapahoe	July 16, '74	Dec. 20, '75
1474	Wright, William M., Gallatin County, Mont.	Property stolen	Crow	Aug., 1874	Dec. 4, '74
2535	Xaramillo, José, Los Lunes, N. Mex.	Cattle	Gila Apache	Dec. 13, '57	Mar. 7, '69
3245	Zook & Aldersan (J. J. Z. and W. W. A.), Custer County, Mont.	Clothing, robes, hardware, groceries, etc.	Cheyenne	Mar. 18, '84	May 5, '84

against Indians in treaty with the Government, etc.—Continued.

Amount claimed.	Amount approved.	Not proved.	Date of action.	Date and clause of treaty creating obligation for payment.	Funds existing, or to be derived from treaty or other obligation, for payment of same.
$200.00	$100.00	.....	1887. June 2	Treaty same as No. 717.	No treaty fund.
2,310.00	1,200.00	.....	Mar. 24	Treaty Sept. 9, 1849, art. 3, 9 Stats., 974.	Do.
700.00	375.00	(*)	Aug. 24	Treaty of Apr. 29, 1868, art. 1, 15 Stats., 639.	See J. L. Allen.
350.00	210.00	.....	July 5	Treaty of Mar. 25, 1853, arts. 1–3, 10 Stats., 1013.	No treaty fund.
1,250.00	650.00	.....	May 12	Treaty of Sept. 9, 1849, art. 3, 9 Stats., 974.	Do.
210.95	210.95	.....	Oct. 31	Treaty of July 21, 1852, arts. 1, 2, 3, and 4, 10 Stats., 979.	Do.
3,425.00	2,001.75	.....	Dec. 12	Treaty of Sept. 17, 1851, art. 4 Revised Treaty, 1047.	See J. L. Allen.
4,000.00	3,900.00	.....	Nov. 3	Treaty of July 27, 1858, arts. 1, 2, 3, and 4, 10 Stats., 1013.	No treaty fund.
1,650.00	1,250.00	.....	1886. May 26	Treaty of Oct. 14, 1865, art. 1, 14 Stats., 703.	See L. A. Allen.
2,288.25	1,432.95	.....	1887. Dec. 12	Treaty of Oct. 1, 1867, art. 1, 15 Stats., 581.	See J. H. Crane.
815.00	350.00	.....	May 27	Treaty of Sept. 29, 1865, art. 10, 14 Stats., 687.	See William Carl, jr.
3,804.00	3,825.00	.....	Oct. 6	Treaty of Oct. 28, 1867, art. 1, 15 Stats., 593.	See L. A. Allen.
2,280.00	1,290.00	.....	Mar. 2	Treaty of Feb. 24, 1869, art. 1, 15 Stats., 673; treaty of July 10, 1866, art. 4, 14 Stats., 683.	See Davis Levi and Thomas Knott.
25,970.00	.....	$25,970.00	Feb. 8	Treaty of Dec. 5, 1869, 12 Stats., 1163; treaty of Mar. 31, 1859, 12 Stats., 1037.	See William Baker.
375.00	195.00	.....	Aug. 23	Treaty of Sept. 29, 1865, art. 10, 14 Stats., 687.	See William Carl, jr.
1,985.00	935.00	.....	Feb. 11	Treaty of Apr. 29, 1859, art. 8, 12 Stats., 957.	No treaty fund.
499.50	.....	499.50	June 3	Treaty of Feb. 26, 1859, Revised Indian Treaties, 1047.	See William Baker.
1,463.00	1,000.00	.....	Feb. 23	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1133.	No treaty fund.
1,575.00	1,575.00	.....	Mar. 2	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1132.	Do.
800.00	.....	800.00	Mar. 14	Treaty of Oct. 21, 1867, 15 Stats., 581.	See J. H. Crane.
3,433.64	3,433.64	(*)	Aug. 24	Treaty of Dec. 5, 1861, art. 2, 12 Stats., 1163.	See L. A. Allen.
900.50	455.25	.....	Mar. 17	Treaty of Dec. 26, 1854, art. 8, 10 Stats., 1132.	No treaty fund.
250.00	205.00	.....	Aug. 23	Treaty of Aug. 25, 1868, art. 1, 15 Stats., 655.	See L. A. Allen.
178.00	98.00	.....	Apr. 19	Treaty of May 17, 1868, art. 1, 15 Stats., 649.	See James Gemmell.
980.00	420.00	.....	May 12	Treaty of July 1, 1852, art. 1–3, 10 Stats., 979.	No treaty fund.
6,387.04½	3,950.28	.....	June 20	Treaty of Aug. 25, 1868, art. 1, 19 Stats., 256; 15 Stats., 655.	See L. A. Allen.

*Barred.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 35.

ADDITIONAL URGENT DEFICIENCY ESTIMATES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Estimates of deficiencies in appropriations for current and last fiscal years for wages and contingent expenses assay office at Boisé City; freight on coin and bullion, assay offices; salaries, office of superintendent State, War, and Navy Department Building; officers' quarters, navy-yard Mare Island, Cal., and statistics of marriage and divorce, Bureau of Labor.

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 4, 1888.

SIR: I have the honor to transmit herewith, for the early consideration of Congress, additional estimates of deficiencies in appropriations for the service of the fiscal years 1887 and 1888, as follows:

Wages and contingent expenses, assay office at Boisé City:	
For the fiscal year 1887	$335.00
For the fiscal year 1888	1,890.00
Freight on bullion and coin, mints and assay offices, 1888	5,000.00
Salaries, office of superintendent State, War, and Navy Department Building, 1888	6,041.20
Officers' quarters, navy-yard, Mare Island, Cal	5,000.00
Statistics of marriage and divorce, Bureau of Labor	7,500.00

Very respectfully,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT, BUREAU OF THE MINT,
Washington, D. C., January 3, 1888.

SIR: An increase in deposits at the United States assay offices has resulted in the exhaustion of the appropriation of $7,500 for freight on bullion and coin between mints and assay offices. I am obliged, therefore, to recommend that an estimate of

$5,000 for a deficiency in this appropriation be inserted in the "urgent deficiency bill."

Until a deficiency is made up, deposits of bullion at the assay offices will have to be subjected to a transportation charge, in order to avoid incurring the deficiency referred to. This will be a hardship upon depositors, and will tend to reduce deposits.

Submitting an estimate for deficiency in appropriations for the maintenance of the United States assay office at Boisé City, Idaho, during the current fiscal year and for unpaid wages of workmen for the month of June, 1887, I have the honor to refer to a statement contained in my annual report for the fiscal year 1887, page 66.

As this deficiency is of an urgent character, I have the honor to request that the present estimate be inserted in the "urgent deficiency bill."

Respectfully, yours,

JAS. P. KIMBALL,
Director of the Mint.

The SECRETARY OF THE TREASURY.

Estimates of appropriations required for the service of the fiscal years ending June 30, 1887 and 1888, by the United States assay office at Boisé City, Idaho.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
TREASURY DEPARTMENT.			
Wages and contingent expenses assay office at Boisé City:			
For wages of workmen during the month of June, 1887, unpaid (appropriated; vol. 24, p. 190, sec. 1)	.....	$335.00	$5,000.00
For wages of workmen for the months of March, April, May, and June, 1888 (appropriated; vol. 24, p. 613, sec. 1)	$1,340.00		
For additional coal and charcoal (appropriated; vol. 24, p. 613, sec. 1)	350.00		
For acids and other necessary supplies (appropriated; vol. 24, p. 613, sec. 1)	200.00		
(Being for the service of the fiscal year 1888.)		1,890.00	5,000.00
Freight on bullion and coin, mints and assay offices:			
For freight on bullion and coin between mints and assay offices, being a deficiency for the fiscal year 1888 (appropriated; vol. 24, p. 608, sec. 1)	.....	5,000.00	7,500.00

OFFICE OF SUPERINTENDENT STATE, WAR, AND NAVY DEPARTMENT BUILDING,
Washington, December 22, 1887.

SIR: I have the honor to inclose herewith estimates of appropriation required to supply a deficiency in the appropriation for salaries in this office for the fiscal year ending June 30, 1888.

Very respectfully,

THOM WILLIAMSON,
Chief Engineer U. S. Navy, Superintendent.

Hon. CHARLES S. FAIRCHILD,
Secretary of Treasury.

OFFICE OF SUPERINTENDENT STATE, WAR, AND NAVY DEPARTMENT BUILDING,
Washington, December 17, 1887.

GENTLEMEN: I have the honor to submit herewith for your consideration deficiency estimates, to the amount of $6,041.20, for salaries to employés whose services are absolutely necessary for the proper care and preservation of the west and center wings of

this building from February 1, 1888, to June 30, 1888, in addition to the force attached to the outside bureaus of the War Department that will become available for duty in this office.

Very respectfully, your obedient servant,

THOM WILLIAMSON,
Chief Engineer, U. S. Navy, Superintendent.

The SECRETARIES OF STATE, WAR, AND NAVY,
Commission for the State, War, and Navy Department Building.

Approved.

T. F. BAYARD
Secretary of State.
R. MACFEELY,
Acting Secretary of War.
W. C. WHITNEY,
Secretary of Navy.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, *by the Superintendent State, War, and Navy Department Building.*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
WAR DEPARTMENT.			
Salaries, office of Superintendent of State, War, and Navy Department Building:			
One assistant engineer, at $1,000 per annum	$414.80		
One machinist, at $900 per annum	373.40		
Nine laborers, at $660 per annum	2,464.20		
Twenty-eight charwomen, at $240 per annum	2,788.80		
Appropriated, Vol. 24, p., 615, sec. 1.		$6,041.20	$89,920.00
(Being a deficiency for the service of the fiscal year ending June 30, 1888.)			

NOTE.—These items are for the payment of salaries to employés whose services are rendered necessary by the occupation of the west and center wings for the period from February 1 to June 30, 1888.

NAVY DEPARTMENT,
Washington, December 28, 1887.

SIR: I have the honor to request that the accompanying estimate of appropriation of $5,000 required by the quartermaster of the Marine Corps for the erection of officers' quarters at the marine barracks, Mare Island, may be submitted to Congress and included in the immediate deficiency bill.

I also inclose copy of Major Lowry's letter to the Department, dated the 24th instant, in explanation of the same.

Very respectfully,

W. C. WHITNEY,
Secretary of the Navy.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

HEADQUARTERS U. S. MARINE CORPS, QUARTERMASTER'S OFFICE,
Washington, D. C., December 24, 1887.

SIR: In the naval appropriation bill, "support of the Marine Corps, fiscal year 1887-'88," as passed by Congress, and approved March 3, 1887, the item of $15,000 was embraced with which to erect officers' quarters at Marine Barracks, Mare Island, Cal. Plans were prepared for said quarters, and after being approved by the Department bids were duly solicited, and opened June 25, 1887, the lowest one received being $16,914, or $1,914 in excess of the amount appropriated. This excess was caused by the phenomenal rise in all building material used in California, for at the time the plans were prepared the cottages could surely have been erected within the amount appropriated.

I therefore respectfully request that the sum of $5,000 may be embraced in the "immediate deficiency bill," to be used in addition to the $15,000 now available for the purpose of the erection of these quarters, the Department having directed the readvertising for their erection to be suspended until spring.

Very respectfully, your obedient servant,

H. B. LOWRY,
Major and Quartermaster, U. S. Marine Corps.

Hon. W. C. WHITNEY,
Secretary of the Navy.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, by the Navy Department.

Detailed objects of expenditure, and explanations.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the current fiscal year ending June 30, 1888.
MARINE CORPS.		
Officers' quarters, navy-yard, Mare Island, Cal.:		
For the erection of officers' quarters at the Marine Barracks, Mare Island, to be immediately available. (Mar. 3, 1887; vol. 24, p. 591, sec. 1)	$5,000	$15,000

DEPARTMENT OF THE INTERIOR, BUREAU OF LABOR,
Washington, D. C., December 20, 1887.

SIR: I have the honor to call your attention to the investigation being carried on by this Bureau under the appropriation made by Congress at the close of the second session of the Forty-ninth Congress relating to the statistics of marriage and divorce.

To enable me to carry on this investigation Congress appropriated the sum of $10,000 in addition to the regular appropriation for the Bureau. With this sum experts have been employed, and with them and the services of such of the regular force of special agents as were available for this purpose, the investigation has been pushed with satisfactory results. Nearly all the territory west of the Mississippi, the New England States, and several of the Middle States have been entirely canvassed, while a considerable portion of all other States and Territories have also been subjected to the work of the agents and experts; yet a large work remains to be done.

In a letter which I had the honor to address to you for the information of the Senate Judiciary Committee, dated April 22, 1886, I made an estimate of the expense of carrying out the intent of that committee in its report of March 2, 1886. On the basis therein laid down, I estimated that the cost of the investigation proposed by the committee, relating to divorce, would be in the vicinity of $25,000.

It is true that with the continued utilization of the special agents of this Bureau I can complete the investigation without further appropriation; but this does not seem to me to be desirable, for, in order to do this, I should be obliged to delay some of the investigations already projected and under way.

I therefore respectfully submit that a further appropriation of $7,500, to enable the Commissioner of Labor to complete the collection of statistics of and relating to marriage and divorce in the several States and Territories, and in the District of Columbia, is advisible, such sum to be made immediately available. With this amount, and the incidental assistance of the regular force, I assure you the investigation contemplated by Congress can be fully completed, thus bringing the cost within the additional sum originally estimated as necessary for the purpose.

I am, very respectfully, your obedient servant,

CARROLL D. WRIGHT,
Commissioner.

The SECRETARY OF THE INTERIOR.

[Indorsement.]

DEPARTMENT OF THE INTERIOR,
December 22, 1887.

Respectfully forwarded to the honorable Secretary of the Treasury for transmission to, and for the favorable consideration of, Congress.

H. L. MULDROW,
Acting Secretary.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, by the Bureau of Labor.

Detailed objects of expenditure, and explanations.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
INTERIOR DEPARTMENT.		
Statistics of marriage and divorce, Bureau of Labor:		
To enable the Commissioner of Labor to complete the collection of statistics of, and relating to, marriage and divorce in the several States and Territories, and in the District of Columbia, to be immediately available (March 3, 1887, vol. 24, p. 625, sec. 1)	$7,500.00	$10,000.00

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 36.

STATE ASYLUM FOR INSANE CRIMINALS, AUBURN, N. Y.

LETTER

FROM

THE ATTORNEY-GENERAL,

TRANSMITTING

A letter from the superintendent of the State Asylum for Insane Criminals at Auburn, N. Y., and asking an appropriation to pay for removing from said asylum certain insane United States prisoners whose terms have expired.

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

DEPARTMENT OF JUSTICE,
Washington, January 4, 1888.

SIR: I beg to inclose herewith a copy of a communication from C. F. MacDonald, medical superintendent of the State Asylum for Insane Criminals at Auburn, N. Y., relative to certain insane persons now in that institution who were, at the time of their admission, United States convicts from the District of Columbia, and were placed in the asylum under the provisions of chapter 465, page 104, Supplement to the Revised Statutes. The term of sentence in each case has long since expired, and the parties are, so far as can be ascertained, entirely friendless. For several years a special appropriation has been made by Congress to meet the cost of their maintenance and care at the Auburn asylum, but it has now become necessary, as indicated in the inclosed letter, that provision for their removal should be made, and as authority to act in such cases is not conferred upon the Attorney-General, the matter seems to be one which should be disposed of by Congress.

I therefore respectfully suggest the introduction of a bill directing and authorizing the Attorney-General to cause Charles Grandison, Frank Seiver, alias George Selvin, and Anthony Stewart, alias Johnson, alias Frank Harris, who were received in the State Asylum for Insane Convicts at Auburn, N. Y., while undergoing sentence in the New York State Prison at Auburn, for crimes committed in the District of Columbia, and whose sentences have expired since they thus become insane, to be removed to the Government Hospital for the Insane, at Washington, D. C., by the United States marshal for the northern dis-

trict of New York, the necessary and actual expenses incurred in the same to be payable from the appropriation for fees and expenses of marshals.

Very respectfully,

A. H. GARLAND,
Attorney-General.

Hon. JOHN G. CARLISLE,
Speaker House of Representatives.

STATE OF NEW YORK,
STATE ASYLUM FOR INSANE CRIMINALS,
Auburn, N. Y., December 15, 1887.

DEAR SIR: Inclosed I have the honor to hand you papers in the cases of Charles Grandison, Frank Seiver, alias George Selvin, and Anthony Stewart, alias Johnson, alias Frank Harris, all colored insane United States convicts, whose terms of sentence to penal servitude have long since expired.

These patients are non-residents of this State, having been convicted in the District of Columbia, and as this asylum is already crowded far beyond its proper capacity, and as demands for the admission of patients from this State are very urgent, I would respectfully request their removal at the earliest practicable day.

Awaiting your favorable action in the premises, I beg leave to remain,

Yours, respectfully,

CARLOS F. MACDONALD,
Medical Superintendent.

Hon. A. H. GARLAND,
Attorney-General of the United States,
Washington, D. C.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 37.

ADDITIONAL CLERKS, PENSION OFFICE.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation to pay for the employment of additional clerks in the Pension Office.

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January* 6, 1888.

SIR: I have the honor to transmit herewith copy of a communication of the Commissioner of Pensions of the 30th ultimo, forwarded by the Secretary of the Interior for transmission to Congress, with his recommendation for its favorable consideration, requesting an appropriation to provide for the employment of fifty additional clerks in the Bureau of Pensions until the expiration of the present term of Congress.

Respectfully, yours,

HUGH S. THOMPSON,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR, BUREAU OF PENSIONS,
Washington, D. C., December 30, 1887.

SIR: I have the honor to recommend that a request be made upon Congress for an appropriation to provide for the employment of fifty additional clerks for this Bureau, until the expiration of the present term of Congress. The reason for this request is that the immense amount of extra work imposed upon the present force by the calls of members of Congress regarding pension claims seriously interferes with the usual work of the Bureau. I would also suggest that the classification of said force be as follows: Ten clerks of class one, ten clerks of class $1,000, thirty copyists at $900.

Attached hereto is a report from the Chief Clerk showing the number of inquiries of the kind indicated since the commencement of the present session of Congress.

Very respectfully,

JOHN C. BLACK,
Commissioner.

Hon. L. Q. C. LAMAR,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR, BUREAU OF PENSIONS,
Washington, D. C., December 24, 1887.

SIR: I have the honor to report that from the 5th instant to the 23d, inclusive, there were received in the mail division of this Bureau 7,436 Congressional inquiries for the status of pension claims. This number does not include the inquiries made personally by members of Congress, which, so far during the present session, have averaged about one hundred per day.

The labor involved in the examination of so many claims and the preparation of the necessary correspondence is enormous. In fact, the great work of the Bureau, the proper allowance of pensions, and the issuance of pension certificates, has in consequence been seriously retarded.

During the second session of the Forty-ninth Congress, from December 1 to the day of adjournment for the holiday recess, December 23, 1886, inclusive, the number of inquiries from members of Congress received in the mail division was 7,153; and during the same period the personal calls were not so numerous as during the present session.

I am, sir, very respectfully,

D. I. MURPHY,
Chief Clerk.

Hon. JOHN C. BLACK,
Commissioner of Pensions.

[Indorsement.]

DEPARTMENT OF INTERIOR,
January 4, 1888.

Respectfully forwarded to the honorable Secretary of the Treasury, with the recommendation that the same be transmitted to Congress for its favorable consideration.

H. L. MULDROW,
Acting Secretary.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 38.

CLAIM OF BISHOP & CO., HONOLULU.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate and letter from the Secretary of State in relation to the claim of Bishop & Co., of Honolulu.

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January* 4, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication, and its inclosures, from the Secretary of State, of the 22d ultimo, in relation to the claim of Messrs. Bishop & Co., bankers, of Honolulu.

Very respectfully,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, December 22, 1887.

Sir: I have the honor to bring to your attention, with a view to its communication to Congress, a copy of a note from Mr. H. A. P. Carter, the minister of Hawaii here, dated December 9, 1886, asking settlement of the claim of Messrs. Bishop & Co., bankers, of Honolulu, against the Government of the United States.

Although the claim has heretofore been presented to Congress, I deem it proper to again restate the facts thereof. Mr. S. U. F. Odell, Hawaiian consul-general at New York, with his note of August 25, 1873, presented the claim of Messrs. Bishop & Co., amounting to $1,181.73, gold coin, and on December 19, 1873, the Hon. Hamilton Fish, Secretary of State, transmitted copy of this note to the chairman of the Committee on Commerce of the Senate. Mr. Fish said:

The claim originated in the failure to pay a draft in this Department drawn by Mr. Mattoon, consul at Honolulu, and negotiated through the claimants, for the relief of destitute seamen, the appropriation having been exhausted at the time the draft was presented. Messrs. Bishop & Co. negotiated the draft through the Bank of California, which, on being apprised of the non-payment here, charged them interest on the sum advanced, and the claim is for the reimbursement of the sum so charged.

The occasion of the exhaustion of the appropriation was the unusual amount of bills drawn by the consul at Honolulu, made *necessary* by the wreck about the time

of a large fleet of whaling vessels in the Arctic Sea near Behring's Straits, the crews of which, in great numbers, were carried to Honolulu, when it became the duty of the consul to relieve them, according to law. The claim appears to be entirely just and equitable, and is consequently commended to the favorable consideration of the committee, of which you [Hon. Z. Chandler] are chairman, in order that the necessary appropriation may be made on behalf of the claimants.

The report of the Committee on Commerce (see Senate Report No. 75, Forty-third Congress, first session) concurred in the views expressed by Mr. Fish, and reported a bill (Senate 272) appropriating the "amount of the claim with interest at 6 per cent. per annum from the time that the amount specified was due."

Accordingly, Senate bill 272 passed the Senate May 12, 1874, and was on that day referred to the House of Representatives, with a request for the concurrence of that body. The bill, however, was, on June 11, 1874, referred to the Committee on Claims, of which the Hon. John B. Hawley was chairman (see House Report No. 299, Forty-third Congress, second session).

The concluding sentence of that report reads as follows:

The committee, being fully satisfied with the justice and merits of the claim, report the said bill (Senate 272) and recommend its passage.

But the House of Representatives never concurred in the Senate's action or passed any measure for the relief of Messrs. Bishop & Co.

Thus the matter remained until the receipt of Mr. Carter's note of December 9, 1886—a copy of which I inclosed to the Committees on Foreign Relations and Foreign Affairs of the Senate and the House, respectively, on the 16th of that month, and briefly cited the legislation of the Senate in the premises. In the Senate, the matter was referred to the Committee on Claims, but no action appears to have been taken in the House of Representatives.

There can be no doubt as to the justice and equity of this claim, which has not only had the careful consideration of this Department, but has been recognized by the Senate in the passage of its bill No. 272, as well as by the Committee on Claims of the House of Representatives in its report, to which reference has been directed.

In view of these facts I therefore earnestly recommend that Congress be requested to immediately pass a bill appropriating the amount of the claim, viz, $1,181.73 United States gold, with interest at 6 per cent. per annum from the time that the sum specified became due.

In order that the matter may be more fully understood, I herewith transmit a copy of Mr. Odell's note of August 25, 1873, with its accompaniments.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

The SECRETARY OF THE TREASURY.

HAWAIIAN LEGATION, *December* 9, 1886.

SIR: I beg to call your attention to the yet unsettled claim of Messrs. Bishop & Co., bankers, of Honolulu, against the Government of the United States for moneys paid by Bishop & Co. for charges upon moneys advanced upon the requisition of C. S. Mattoon, United States consul, for the relief of wrecked and destitute seamen. These charges arose from the protest of a consular draft, which was subsequently paid, and included interest and other charges, for which Messrs. Bishop & Co. became responsible to protect the honor of the United States Government. The justice of this claim has never been disputed, and the Hawaiian consul-general at New York was notified in February, 1874, by the honorable Hamilton Fish, that "application had been made to Congress for the necessary appropriation to pay the claim." This application apparently resulted in the passage in the Senate, on the 12th of May,

e bill 272, Forty-third Congress, first session, appropriating the money, however, to pass the House of Representatives, and no further action ve been taken.

t will only be necessary for your excellency to renew the application to nsure the appropriation for the settlement of the claim, and I am re- R your attention to the matter and ask for your consideration.

ir, your most obedient humble servant,

H. A. P. CARTER.

S. F. BAYARD,
tary of State, Washington, D. C.

HAWAIIAN LEGATION,
New York, August 25, 1873.

ve the honor to transmit to you a copy of a letter addressed by Messrs. ., bankers in Honolulu, dated July 30 ultimo, with a copy of Messrs. .'s letter to C. S. Mattoon, esq., United States consul at Honolulu, dated , which I have received from His Hawaiian Majesty's foreign minister, claim of Messrs. Bishop & Co. upon the United States Government for ited States gold coin.

e copies of letters (certified by His Majesty's minister of foreign affairs) g statements are desirable, which have already, doubtless, been made you by the communications you will have received from the United States Mattoon, viz:

umn of 1871 Messrs. Bishop & Co. advanced to the United States consul , to meet the extraordinary expenses caused by a large number of desti- an seamen being thrown upon the consulate for support, for which they sul's draft at fifteen days, dated December 21, 1871, on the honorable Sec- tate, for $35,700 United States gold, and at the end of the succeeding rch 31, 1872), on the same account, another draft, drawn in same man- 992.42 United States gold coin, both of which were sent to the bank of nd their value credited in account to Messrs. Bishop & Co. by the said Messrs. Lees & Waller, of New York, presented these drafts for payment, d that the appropriation was exhausted, and were notified by a letter bursing clerk of the State Department that when the "deficiency bill" passed the Senate and become law the aforesaid drafts would be paid, d to hold the drafts until they could be paid, which they did.

ies, also, took a large amount of the consul's drafts (December 31, 1871), id to have been promptly paid, and probably exhausted the appropriation. shop & Co. assert that in consequence of "snow blockade," etc., the mails sually long time on the way to and from New York in the early part of at telegraphic communication was also interrupted, so that they took the (March 31, 1872), not being aware of the postponement of payment of the that the drafts were finally paid on the 3d June, 1872, and that they were the Bank of California with interest at 10 per cent. per annum on the from the date at which they should have been paid, February 26 and , respectively, until the date of payment, June 3, amounting in all to ited States gold coin, which they paid, and which they now ask, this 's Government, may be refunded to them.

honor to be, with the highest consideration, sir,
most obedient servant,

S. U. F. ODELL.

ILTON FISH,
ry of State, etc., Washington, D. C.

BANKING HOUSE OF BISHOP & CO.,
Honolulu, July 30, 1873.

ave the honor to inclose herewith a claim upon the United States Gov- $1,181.73, United States gold coin, which we request your excellency to ted in the proper manner and place, being confident that if so presented id. The circumstances connected with this claim we recite as follows:

umn of 1871 the whaling fleet in the Arctic Ocean was almost entirely r the ice, and a large number of destitute American seamen were thrown ited States consulate at this port. At the end of the quarter, December United States consul, C. S. Mattoon, esq., drew upon the honorable Sec- ate of the United States, at fifteen days' sight, acceptance waived, etc., with which to pay the consular accounts; and we took one of the drafts, o $35,700, payable in United States gold coin, and other parties here took ant at the same time and rate,

At the end of the succeeding quarter, March 31, 1872, when we supposed the above-mentioned draft to have been paid—we had heard of nothing to the contrary—we took another draft of the same character for the sum of $39,992.42. Both of these drafts we sent to the Bank of California, San Francisco, and received credit therefor, and that bank sent them to their agents in New York, Messrs. Lees & Waller, for collection.

We infer that the drafts of December 31, 1871, taken by other parties, though sent by the same mail, must have been presented a little before the one taken by us, for we understand that they were promptly paid, whereas the presenters of the drafts taken by us were told that the appropriation was exhausted, and that the drafts would have to wait payment until a new appropriation could be made by Congress. Messrs. Lees & Waller were notified by the disbursing clerk of the State Department that when the "deficiency bill" should have passed the Senate and become law the drafts for $35,700 and $39,992.42 would be paid, and requested to hold the drafts until they could be paid. Instead of returning them to us, the Bank of California held them as requested, and under date June 20 advised us that they had been paid on the 3d of that month, and that they had charged us in account with interest, as follows:

Interest on the draft for $35,700 from February 26 to June 3, 1872, 99 days at, 10 per cent., $981.77; interest on the draft for $39,992.42, from May 16 to June 3, 1872, 18 days, at 10 per cent., $199.96; amount in all to $1,181.73, United States gold coin.

Interest was charged from the dates at which the drafts were payable according to their tenor up to the date at which they were paid, and all that we ask for is the actual amount paid by us to the Bank of California for interest.

In November, 1871, we imported from San Francisco $30,000 in gold coin, at a large expense for freight, insurance, interest, and exchange, and that enabled us to supply the unusual wants of the consul.

Had we have known when we took the second draft (that of March 31, 1872) that the first was unpaid, and were to wait an indefinite time for the passage of a law, we would either have declined it, or have charged an additional rate of premium on the money that would have covered all and perhaps more than we now claim as being fairly due to us.

Of late years the consul's drafts have been so promptly paid at maturity at Washington that they have been taken at as favorable rates, considering their time and the locality where payable, as first-class commercial drafts have usually been taken, although the latter are liable for damages, interest, expenses, etc., in case of dishonor.

We have for a number of years past taken a large part of the drafts drawn by consuls and paymasters of national vessels at this port, because we were ready to take them without delay at the most favorable rates for the sellers, and the United States Treasury has been profited thereby.

Before we took either of these drafts we were told by Mr. Mattoon, the consul, that their payment was not dependent upon an appropriation, but would be paid from a large fund, the accumulation of the monthly payments by merchant seamen. He was mistaken, and as we had no means of knowing that the appropriation would be exhausted, the loss to us is in no sense the result of any fault or neglect of ours.

Inclosed herewith you will find press copy of our letter of July 2, 1872, to the United States consul, in which we inform him of the circumstances of our loss. He (Mr. Mattoon) admitted the equity of our claim for reimbursement for the amount now asked for, and expressed his regret that he could not pay it to us without instructions to that effect from his Government.

We are aware that the United States Government has not usually paid interest on drafts held over for payment, and we have no doubt that that practice has cost the United States Treasury much more in high premiums on drafts upon the Departments than the interest saved amounted to.

Considering the assurances that we received from the consul, the long delay of the mails by snow blockade, keeping the drafts a long while on the way, and preventing us from receiving advices, all of which had an influence upon the rate at which we took the drafts favorable to the United States Treasury and (as it now stands) detrimental to us, we feel that we have a claim that must commend itself to the sense of justice of all to whose notice it is brought.

We have to request that your excellency will do us the favor to bring this claim to the notice of the honorable Secretary of State of the United States, on whom the drafts mentioned were drawn, and we can not but believe that the propriety and justice of our claim will be so apparent to him that he will either order its payment, or so recommend it in the proper quarter that its payment will be provided for.

We remain, with great respect, your excellency's most obedient servants,

BISHOP & CO.
JOHN H. PATY.

His Excellency CHAS. R. BISHOP,
H. H. M.'s Minister of Foreign Affairs, Honolulu.

DEPARTMENT OF FOREIGN AFFAIRS,
Honolulu, August 1, 1873.

I hereby certify that the foregoing is a true copy of the original letter on file in this office, and that the statements contained in it are facts.

CHAS. R. BISHOP,
Minister of Foreign Affairs.

BANKING HOUSE OF BISHOP & CO.,
Honolulu, July 2, 1872.

SIR: You will recollect that when we took your drafts upon the honorable Secretary of State at Washington, D. C., for the quarter year ending December 31, 1871, it was with the understanding that there was a large accumulation of funds in the United States Treasury, against which drafts for relief of destitute American seamen were drawn, so that although the demands upon the fund might be unusually large, no appropriation would be necessary.

Besides the consular drafts at this port having for a long time past been promptly paid, we had no reason to doubt that yours would be accepted immediately and paid at maturity, and therefore made no calculation or charge for delay when naming the rate of exchange.

When we took your draft for $39,992.42 for the quarter ending March 31, 1872, we had not heard from that of December 31, and hence supposed it to have been paid at maturity, otherwise we would not have taken the second draft, that of March 31, or at least not at the rate of exchange that was charged.

It turned out that a new appropriation by Congress was necessary before the drafts that we had taken could be paid (though we are informed that those held by other parties were paid without delay), and Messrs. Lees & Waller, of New York, agents of the Bank of California, San Francisco, to whom the drafts were sent for collection, were notified by letters from the disbursing clerk of the State Department that when the "deficiency bill" should have passed the Senate and become law, the drafts for $35,700 and $39,992.42 would be paid, and requested to hold the drafts until they could be paid.

By letter from the Bank of California, who took the drafts from us dated June 20, we are advised that the said drafts were paid on the 3d of June, and we are charged interest on the draft for $35,700 from February 26 to June 3, 1872, ninety-nine days, at 10 per cent., $981.77, and interest on draft for $39,992.42 from May 16 to June 3, eighteen days, at 10 per cent., $199.96, amounting in all to $1,181.73 in gold, which rate of interest, though high, is the legal rate of California, and 2 per cent. less than the current bank rate in San Francisco.

Had the drafts been drawn upon private parties and dishonored, they would have been protested, and we would have recovered interest, damages, expenses, etc. The Department had in the first place the advantage of delay of mails, caused by the "snow blockade," when the first draft was sent, and having requested Messrs. Lees & Waller to hold the drafts until after the passage of the "deficiency bill," we are surprised that interest, at least which we suppose Messrs. Lees & Waller to have claimed, was not paid.

We ask for nothing more than what we have had to pay in consequence of the delay, which is not our whole loss, viz, $1,181.73 gold, which could properly be charged to the same account as the drafts; and we trust that the honorable Secretary of State will direct that amount to be paid to Messrs. Lees & Waller for our account.

The justness of this claim, under all the circumstances, must be so apparent to you, that we can not doubt but that your representation of it to the proper authority will secure its payment.

We remain, sir, with great respect, your obedient servant,

BISHOP & CO.

C. S. MATTOON, Esq.,
United States Consul, Honolulu.

FOREIGN OFFICE,
Honolulu, August 1, 1873.

I hereby certify that the foregoing is a true copy of the original letter delivered to C. S. Mattoon, esq., United States consul, July 2, 1872.

CHAS. R. BISHOP,
Minister of Foreign Affairs.

KANAWHA RIVER IMPROVEMENT; PAY OF CONTRACTORS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of War of an appropriation to pay Charles McCafferty and D. and C. P. Dull, contractors on the Great Kanawha River improvement. (Deficiency.)

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 7, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of War of the 5th instant, submitting an estimate for an appropriation of $64,749.45, to pay the amounts found due Charles McCafferty and D. and C. P. Dull, contractors on the Great Kanawha River improvement, as required by the river and harbor act of August 2, 1882 (22 Stat., p. 209).

Respectfully, yours,

HUGH S. THOMPSON,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
Washington City, January 5, 1888.

SIR: The river and harbor appropriation act of August 2, 1882 (22 Stats., 209), authorized and directed the Secretary of War to settle certain claims of Charles McCafferty and D. and C. P. Dull, contractors, on the Great Kanawha River improvement, "and report what amount, if any, he finds to be due to said contractors at the next session of Congress. In compliance therewith, the claims were settled, and reported to Congress January 12, 1887, as per House Executive Document No. 85, Forty-ninth Congress, second session (copy herewith). No appropriation has been made to pay the awards, and I

have the honor to request that the accompanying estimate of the amount ($64,749.45) required by this Department for that purpose may be transmitted to Congress.

Very respectfully,

WM. C. ENDICOTT,
Secretary of War.

The SECRETARY OF THE TREASURY.

Estimate of appropriation required by the War Department.

Detailed object of expenditure.	Amount required.
Improving Great Kanawha River, West Virginia:	
To enable the Secretary of War to pay the awards to Charles McCafferty and D. and C. P. Dull, for work on the Great Kanawha River, West Virginia, as reported to Congress by said Secretary, January 12, 1887 (act August 2, 1882; vol. 22, p. 209, sec. 1)	$64,749.45

[House Ex. Doc. No. 85, Forty-ninth Congress, second session.]

WAR DEPARTMENT,
Washington City, January 12, 1887.

The Secretary of War has the honor to report to the House of Representatives, in accordance with the provisions of the river and harbor act of August 2, 1882, wherein he is directed to settle the claims of Charles McCafferty and of D. and C. P. Dull, contractors for locks on the Great Kanawha River, that he has examined the said "claims of Charles McCafferty and D. and C. P. Dull, contractors for Locks No. 4 and 5 on the Great Kanawha River, under contracts made in 1874 and 1875, and subsequently for work done by reason of changes in the contracts and for losses caused by such changes and by extra work and other losses incurred from such and other causes beyond their control," and having heard their allegations, proofs, and arguments, and examined all evidence available and bearing on the questions submitted, he finds that by reason of changes in the contracts, for losses caused by such changes, for extra work, and for other losses from causes beyond their control, the amount due said contractors is as follows, viz:

To Charles McCafferty	$30,370.15
To D. and C. P. Dull	34,379.30

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 40.

WATERTOWN ARSENAL, MASSACHUSETTS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of War of an appropriation to improve the sanitary condition of Watertown Arsenal.

JANUARY 9, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 7, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of War of the 6th instant, submitting an estimate of appropriation in the sum of $11,908.96 for improving the sanitary condition of the Watertown Arsenal, Watertown, Mass.

Respectfully, yours,

HUGH S. THOMPSON,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
Washington City, January 6, 1888.

SIR: I have the honor to forward herewith, for transmission to Congress, an estimate and accompanying papers of an appropriation ($11,908.96) required for improving the sanitary condition of Watertown Arsenal, Massachusetts.

Very respectfully,

WM. C. ENDICOTT,
Secretary of War.

The SECRETARY OF THE TREASURY.

Estimate of appropriations required for the service of the fiscal year ending June 30, 1889, by the Ordnance Department, U. S. Army.

Detailed objects of expenditure and explanations.	Total amount to be appropriated under each head of appropriation.
Watertown Arsenal, Watertown, Mass: For providing a system of sewerage, sinks, etc., in accordance with plans and estimate forwarded to Ordnance Office February 10, 1885 (submitted)	$11,908.96

NOTE.—Necessary to put the arsenal in proper sanitary condition.

ORDNANCE OFFICE, WAR DEPARTMENT,
Washington, D. C., January 4, 1888.

SIR: I have the honor to invite your attention to the inclosed report of the post surgeon and the commanding officer of the Watertown Arsenal, Massachusetts, on the bad sanitary condition of that post, and the absolute necessity for a system of sewerage that will eliminate the dangers which it is shown now threaten the health and life of the garrison. The post surgeon states that further hesitancy in remedying the existing condition of affairs will be not only reprehensible but actually and absolutely criminal.

This matter was specially brought to the attention of Congress in 1885 (see House Ex. Doc. No. 241, Forty-eighth Congress, second session), when an estimate was submitted asking an appropriation of $11,908.96 for the purpose.

An item of a like amount was embraced in the estimates for the fiscal years ended June 30, 1887 and 1888.

I again submit herewith an estimate for this work, with recommendation that Congress be asked to appropriate the sum of $11,908.96, and that it be made immediately available for putting the arsenal in a good sanitary condition.

Very respectfully, your obedient servant,

S. V. BENÉT,
Brigadier-General, Chief of Ordnance.

WATERTOWN ARSENAL,
Watertown, Mass., November 15, 1887.

SIR: In compliance with the provisions of paragraph 2315, Army Regulations, as amended by General Orders No. 79, series of 1885, from the Adjutant-General's Office, I have the honor to make the following sanitary report for your consideration and action.

Very respectfully, your obedient servant,

J. C. MCKEE,
Surgeon, U. S. Army, Post Surgeon.

The COMMANDING OFFICER,
Watertown Arsenal, Massachusetts.

[First indorsement.]

WATERTOWN ARSENAL, *November* 19, 1887.

Respectfully forwarded to the Surgeon-General U. S. Army, through the Chief of Ordnance U. S. Army.

The recommendations in this report and the condemnation of cess-pools at this arsenal is a confirmation and repetition of views expressed by the former post surgeon and myself in a report dated December 31, 1884; subsequently (February 10, 1885) an estimate of cost was submitted for establishing a proper system of sewerage discharging into the Charles River, in place of the present system of open cess-pools. The expression "open cess-pools" in this report is understood to mean an uncemented one, permitting the contents to escape into the surrounding soil, and not an uncovered one.

F. H. PARKER,
Lieutenant-Colonel Ordnance Department, U. S. Army, Commanding.

WATERTOWN ARSENAL,
Watertown, Mass., November 15, 1887.

SIR: I would respectfully call early attention and prompt consideration to the fact that, since I have been on duty at this arsenal as post surgeon, from the 10th of last August, I have had one, if not two, well-marked cases of what is familiarly known to sanitarians, hygienists, and physicians as "filth diseases."

The first one, that of "typhoid fever" in the person of a young lady, daughter of Sergeant Foerest, Ordnance Department, from the first onset assumed a virulent and unmanageable type, and notwithstanding assiduous attention, great care, and intelligent nursing advanced to a rapid and fatal termination. The other, that of a child five years of age, daughter of Private O'Hearn, Ordnance Department, with "spinal meningitis" of a most painful and distressing character; result unknown, as she is still living.

The excretions of the typhoid-fever case, which are now known and recognized as conveying the contagion of the disease through soil by water, were treated at once thoroughly with disinfectants and antiseptics, so as to protect the water supply of the garrison from any possible contamination. In this connection I would call your attention to the following figures and statistics, based upon the estimate of Mr. Gregg, chief clerk for many years, and consequently familiar with the history and records of the arsenal, which has been in existence since A. D. 1814:

From 1814 to 1860, a period of forty-six years, it is estimated that the average number of persons—officers, soldiers, mechanics, employés, women, and children—living on the grounds would be twenty daily. Parke's Hygiene, the most reliable work of the kind, estimates that the average daily excreta of all ages and both sexes is about 2¼ ounces of fecal or solid matter and 40 ounces of urinary discharge for each individual—men, women, and children. Then for twenty persons for forty-six years there would be, solid or fecal matter, 26 tons; liquid or urinary matter, 1,654 hogsheads. Then from 1860 to 1865, five years during the late war, the average number of persons employed was about six hundred daily, which would give, as above, solid or fecal matter, 86 tons; liquid or urinary matter, 5,461 hogsheads.

From 1865 to 1887, a period of twenty-two years, one hundred persons, making about the daily average, would give about, solid or fecal matter, 62 tons; liquid or urinary matter, 3,983 hogsheads; making a total since A. D. 1814 of about, solid or fecal matter, 174 tons; liquid or urinary matter, 11,098 hogsheads.

In addition, the slop, grease, etc., from the kitchens of the barracks and quarters is, when putrid, most offensive and dangerous, and in amount must be nearly equal to the fecal matter, all of which has been received into the ground and subsoil of this arsenal through the vicious and dangerous open cess-pool system, all this in an area of not more than a few acres.

This calculation is a very moderate one, and shows that the soil, sand, and gravel formation underneath must necessarily be filled and saturated with putrid organic matters, and carb-ammoniacal gases, as carbonic acid, nitrogen, light carburetted hydrogen, and sulphuretted hydrogen. But these are of less importance than the great mass of putrid organic substance, as illustrated lately in sinking a new cess-pool some 50 feet from an old to the depth of 12 feet, in which the air was found so foul and fetid and the men at work were so nauseated, that they had to pass backward and forward frequently for fresh air. These cess-pools are quite near the quarters—only a few feet distant—and the soldiers often complain of bad smells at night in the barracks in hot weather. The total number of open cess-pools is twenty-five and the cemented ones two.

The water supply is procured from wells of some 60 or 70 feet deep, and were recently driven in the bottom of old wells which were 16 to 20 feet deep and had generally become dry. Capt. John Pitman, Ordnance Department, made an analysis some three years ago, when the wells were first driven, and found the water pure and potable. Analysis, however, thoroughly and critically conducted, has as yet failed to detect the contagion or bacilli of typhoid or other filth disease.

It will only be a matter of time, and I am of the opinion but a short one, when the inmates of this garrison will be (as they have been lately threatened) scourged by an epidemic of typhoid fever, diphtheria, or other filth disease. Indeed, I know of no one spot, in all my experience in the different parts of the United States, and it has been extensive and general in my service of thirty years, from the Atlantic to the Southwest, in New Mexico and Arizona, to California and the Northwest, in Oregon and Washington Territory, which affords more favorable soil and surroundings for the invasion and ravages of a cholera epidemic than this arsenal. Almost a like condition of affairs, but of a less degree, existed at Vancouver Barracks, Wash., Headquarters of the Department of the Columbia, when I was a medical director of the Department. The barracks are situated on the Columbia River, and, like this, have an excellent surface drainage, being on a plateau above the stream. A temporary system of cesspools had been adopted and in use from 1848 to 1884-'85, but the garrison had the advantage of being supplied with *water by pipes* from the reservoir of

the neighboring village of Vancouver, Wash. Nevertheless, General N. A. Mil
U. S. Army, commanding, was so impressed with the great danger arising from t
nuisance, that he took immediate and prompt measures and introduced an excell
and efficient system of drainage, after "Waring's System," into the Columbia Riv

The system of drainage already planned and estimated for by you should, with
any unnecessary delay, be carried out, otherwise I can safely and conscientiously
that the inmates of this garrison are living over a mine of disease that may expl
at any time and bring grief, dismay, and death into any or all households, as it alre
has done in one.

Further hesitancy and delay on the part of those in authority, after this warni
will not only be reprehensible but actually and absolutely criminal.

Very respectfully, your obedient servant,

J. C. McKee,
Surgeon U. S. Army, Post Surgeon

F. H. Parker.
Lieut. Col. Ord. Dept. U. S. Army, Commanding.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 41.

INFORMERS AND SEIZING OFFICERS, CUSTOMS SERVICE

LETTER

FROM

THE ACTING SECRETARY OF THE TREASURY,

TRANSMITTING

A report of payments to informers and seizing officers in the customs service during the fiscal year ending June 30, 1887.

JANUARY 9, 1888.—Referred to the Committee on Expenditures in the Treasury Department and ordered to be printed.

TREASURY DEPARTMENT,
January 7, 1888.

SIR: In compliance with the requirements of section 3 of the act of June 22, 1874, entitled "An act to amend the customs revenue laws and to repeal moieties," I have the honor to submit herewith, for the information of Congress, a report in detail of all payments made to informers and seizing officers, under the provisions of said act, during the fiscal year ending June 30, 1887.

Respectfully, yours,

HUGH S. THOMPSON,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

Detailed report of awards of compensation, in lieu of moieties, to informers and seizing officers, in customs fines and forfeitures, for the fiscal year ended June 30, 1877, *as required by section* 3, *act of June* 22, 1874.

[See Statutes at Large, vol. 18, page 186.]

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1886.				
7687	Detroit	Seizure	July 8	$11.05	John Higgs	$3.86	1 overcoat.
7688	do	do	do	4.80	T. E. McDonough	1.68	Cigar-holders.
7689	do	do	do	1.36	do	.47	Silk ties.
7690	do	do	do	1.00	John A. Baxter	.35	Silk handkerchiefs.
7691	Aroostook	do	do	73.52	O. F. Stacy; F. C. Nickerson	25.73	Team and oats.
7692	do	do	do	55.90	do	19.56	Do.
7693	do	do	do	52.80	do	13.20	Oxen and colt.
7694	do	do	do	60.00	do	21.00	Do.

Detailed report of awards of compensation, in lieu of moities, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1886.				
7695	San Francisco	Seizure	July 8	$18.67	O. F. Stacy	$6.53	Liniment.
7696	do	do	do	9.84	E. W. Lowney	3.44	Steers.
7697	do	do	do	61.84	Anthony Valley, inf'r E. W. Lowney, seizer	18.83 15.46	Colt, etc.
7698	do	do	do	10.00	G. B. Kinney	2.50	1 horse.
7699	do	do	do	200.36	Chas. Gallagher	50.09	Team and oats.
7700	do	do	do	236.44	do	59.11	Do.
7701	do	do	do	115.80	D. W. Sypher	28.95	Team and oats.
7702	do	do	do	121.65	Frank D. Gidney	30.41	1 horse.
7703	do	do	do	40.00	Jeremiah Harford, informer. John A. Nadeau, seizer.	10.00 8.33	Do.
7704	do	do	do	25.00	Jeremiah Harford	6.25	Horse and bull.
7705	do	do	do	48.00	Thomas Cook	12.00	1 stallion.
7706	do	do	do	27.00	Wm. J. Porter	6.75	1 sled.
7707	do	do	do	39.40	Thomas Cook and C. L. Smith.	9.85	Oats.
7708	do	do	do	17.50	Larra Gagnon	4.37	1 horse.
7709	do	do	do	33.20	Daniel H. Blake	8.30	2 horses.
7710	do	do	do	112.25	Frank D. Gidney	28.06	Do.
7711	do	do	do	212.00	do	53.00	2 mares.
7712	do	do	do	115.00	Barney McAttee	28.75	V. B. Smith.
7713	New York	do	July 16	3,180.00	Martin Marcus	795.00	Isidor Emrich.
7714	do	do	do	5.72	T. J. Donohue *et al*	2.00	Molasses.
7715	do	do	do	21.36	do	7.50	Sugar.
7716	do	do	do	34.90	do	12.21	Jewelry.
7717	do	do	do	2.84	do	.99	600 cigars.
7718	do	do	do	34.00	John Wilson	8.65	117 bottles gin.
7719	do	do	do	4.52	Wm. Hussey *et al*	1.58	46 pipes.
7720	do	do	do	1.78	D. B. Harrison	.62	2 brooches.
7721	do	do	do	40.81	John Anderson	10.20	Cigars.
7722	do	do	do	.98	D. B. Harrison *et al.*	.34	Cutlery.
7723	do	do	do	2.57	T. J. Donohue *et al.*	.89	250 cigars.
7724	do	do	do	4.05	D. B. Harrison *et al.*	1.41	Cutlery.
7725	do	do	do	2.53	Geo. Williams	.88	1 umbrella.
7726	do	do	do	1.73	T. J. Donohue *et al.*	.60	100 cigars.
7727	do	do	do	3.61	A. McCort *et al*	1.26	Bay rum.
7728	do	do	do	35.97	T. J. Donohue *et al.*	12.58	Chinaware.
7729	do	do	do	1.53	D. B. Harrison *et al.*	.53	Pipe holders.
7730	do	do	do	1.83	do	.63	Knives.
7731	do	do	do	12.05	do	5.26	Bead gimp.
7732	do	do	do	1.35	M. Costello	.47	Jewelry.
7733	do	do	do	2.65	W. H. Stone	.92	200 cigars.
7734	do	do	do	78.00	Geo. H. Simmons	27.30	1 coat.
7735	Boston	do	July 20	257.74	Ralph M. Kendall	70.94	C. J. Oberg.
7736	Niagara	do	Aug. 2	13.40	A. T. Cudaback	4.69	2 cloaks.
7737	do	do	do	7.24	do	2.53	1 overcoat.
7738	do	do	do	21.26	G. W. Whitehead	7.44	26 yards silk.
7739	do	do	do	113.33	do	39.66	Guns, etc.
7740	Passamaquoddy	do	Aug. 3	42.18	John H. Hayden	14.76	Dress goods.
7741	do	do	do	22.12	do	7.74	Gloves.
7742	do	do	do	25.91	do	9.06	Needles.
7743	do	do	do	24.55	H. H. Wadsworth	8.59	Hoops.
7744	do	do	do	79.81	N. S. McGarry	27.93	Dress goods.
7745	do	do	do	175.00	John McCarty	43.75	B. L. Eaton.
7746	Corpus Christi	do	Aug. 10	5.76	A. H. Ireland	2.01	2 gallons mescal.
7747	do	do	do	5.06	F. M. Reid	1.77	Cloth.
7748	do	do	do	2.77	H. J. Clifford	.96	Mescal.
7749	do	do	do	4.30	do	1.50	1 mare.
7750	do	do	do	2.85	Wm. Foster	.99	180 oranges.
7751	do	do	do	6.05	Victor Morel	2.11	2 horses.
7752	do	do	do	5.50	do	1.92	Do.
7753	San Francisco	do	Aug. 14	1.25	H. Delafield	.43	100 cigars.
7754	do	do	do	3,291.11	M. Phillips F. Wadsworth	1,645.55	15 pckgs. opium.
7755	do	do	do	151.52	F. Cruse C. Emslie	53.03	84 pckgs. opium.
7756	do	do	do	139.06	E. McLaughlin *et al.*	48.67	80 pckgs. opium.
7757	do	do	do	1,867.49	H. Hudemann	653.62	24 pckgs. opium.
7758	Portsmouth	do	Aug. 24	9.25	James I. Parsons, informer. Wallis Drew, seizer.	2.31 1.06	1 mare.
7759	Brazos	do	Sept. 7	1.20	J. P. O'Shaughnessy	.42	1 horse.
7760	do	do	do	5.40	E. R. Jefferds	1.89	2 horses.
7761	do	do	do	4.40	J. P. O'Shaughnessy	1.54	1 horse.
7762	do	do	do	7.95	L. Hinojosa *et al*	2.78	3 horses.
7763	do	do	do	3.62	M. Werbiski *et al*	1.26	Brandy.
7764	do	do	do	1.03	G. W. Miller	.36	Lace.
7765	do	do	do	2.12	M. Werbiski *et al*	.74	Thread.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1886.				
7766	Brazos	Seizure	Sept. 7	$1.85	T. Tyerina	$0.64	100 cigars.
7767	do	do	do	5.09	G. W. Miller	1.78	Thread.
7768	do	do	do	2.87	Joseph Dunn	1.00	Tobacco.
7769	do	do	do	2.28	J. P. O'Shaughnessy	.79	Do.
7770	do	do	do	17.47	M. Werbiski *et al*	6.11	Thread.
7771	do	do	do	1.74	do	.60	Tobacco.
7772	do	do	do	19.48	L. Hinojosa *et al*	6.81	Whisky.
7773	do	do	do	1.35	G. M. Putegnat	.47	Mescal.
7774	do	do	do	6.65	L. Hinojosa *et al*	2.32	Rings.
7775	do	do	do	5.09	G. M. Putegnat *et al*	1.78	2 dolls, etc.
7776	do	do	do	2.84	L. Hinojosa *et al*	.99	100 oranges.
7777	do	do	do	4.80	E. R. Jeffards	1.68	1 horse.
7778	New York	do	Sept. 8	29.30	Chas. McAllister	7.32	Sugar, etc.
7779	do	do	do	54.41	Thos. McCullough	13.60	Do.
7780	Paso del Norte	do	Sept. 11	1.85	Victor Morel	.64	1 horse, etc.
7781	do	do	do	1.78	W. C. Horgan *et al*	.62	1 skiff, etc.
7782	do	do	do	10.37	P. S. Coy	2.59	3 horses.
7783	Vermont	Duty, 151	Sept. 25	253.64	H. A. Channell	63.41	A.B. Nelson (butter).
7784	Passamaquoddy	Seizure	Oct. 5	73.37	John H. Hayden	25.67	1,334 boxes herring.
7785	Brazos	do	do	1.88	J. P. Cothingham, etc.	.65	4 lbs. pepper.
7786	do,	do	do	16.70	L. Hinojosa, etc	5.84	2 horses.
7787	do	do	do	4.15	do	1.45	1 horse.
7788	do	do	do	5.03	J. P. Cothingham, etc.	1.76	2 horses.
7789	do	do	do	.61	J. P. O'Shaughnessy	.21	1 horse.
7790	do	do	do	.79	William H. Schmidt	.27	Do.
7791	do	do	do	5.20	do	1.82	1 horse.
7792	do	do	do	5.85	Geo. M. Putegnat	2.04	6 shirts.
7793	New York	Fine	Oct. 12	500.00	J. B. Woolley	125.00	Chas. P. Jones.
7794	San Francisco	Seizure	Oct. 21	12.68	A. B. Andrews	4.43	13 boxes opium.
7795	do	do	do	57.95	C. Hoerchner *et al*	20.28	Opium, etc.
7796	do	do	do	3.84	do	1.34	Cloth.
7797	do	do	do	4.18	do	1.46	Pipes.
7798	do	do	do	2.69	do	.94	Scarf.
7799	do	do	do	30.97	do	10.83	Do.
7800	do	do	do	9.22	do	3.22	Pipes.
7801	do	do	do	88.61	do	31.01	Opium.
7802	do	do	do	15.47	do	5.41	Coats.
7803	do	do	do	14.85	do	5.19	Opium.
7804	do	do	do	511.39	do	178.98	Do.
7805	do	do	do	18.88	do	6.60	Clothing.
7806	do	do	do	28.71	do	10.04	Opium.
7807	do	do	do	17.09	do	5.98	Do.
7808	do	do	do	204.77	do	71.66	Do.
7809	do	do	do	507.74	Jeff. Powers, etc.	177.70	Do.
7810	do	do	do	76.04	T. J. Smith	26.61	Do.
7811	Corpus Christi	do	Oct. 25	4.00	W. C. Horgan; J. F. McDermott	1.40	1 mule.
7812	do	do	do	13.50	V. Morel	4.72	1 horse, etc.
7813	Paso del Norte	do	Oct. 26	2.31	Tom Green; N. F. Leslie	.80	2 mares, etc.
7814	do	do	do	2.27	J. P. O'Ferrall	.79	625 cigars.
7815	do	do	do	1.25	do	.43	Gloves.
7816	do	do	do	2.75	S. A. O'Brien	.96	1 hat.
7817	do	do	do	13.11	J. P. O'Ferrall	4.58	125 cigars.
7818	do	do	do	47.95	C. B. Sheridan	16.78	Table-cloths.
7819	do	do	do	30.11	Tom Green	10.53	4 horses.
7820	Corpus Christi	do	Oct. 27	1.85	V. Morel	.64	1 horse.
7821	do	do	do	1.78	W. C. Horgan; J. F. McDermott	.62	1 skiff.
7822	do	do	do	10.37	P. S. Coy	2.59	3 horses.
7823	Detroit	do	Nov. 2	2.00	T. E. McDonough	.70	Handkerchiefs.
7824	do	do	do	12.35	John Higgs	4.32	Clothing.
7825	do	do	do	27.40	do	9.59	Do.
7826	do	do	do	2.50	T. E. McDonough	.87	Gold cross.
7827	do	do	do	2.30	John Higgs	.80	Cotton work.
7828	do	do	do	2.40	do	.84	Slippers.
7829	do	do	do	1.10	do	.38	Clothing.
7830	do	do	do	5.15	do	1.80	Do.
7831	do	do	do	5.65	O. B. Curtis	1.97	Do.
7832	do	do	do	1.36	M. C. Strong	.47	Braid.
7833	do	do	do	1.44	J. P. Long	.50	Clothing.
7834	do	do	do	1.05	M. C. Strong	.36	Braid.
7835	do	do	do	2.29	do	.80	Skins.
7836	do	do	do	1.44	John Higgs	.50	Cloth.
7837	do	do	do	9.15	do	3.20	Clothing.
7838	Vermont	Duty	Nov. 4	200.00	H. I. Channell	50.00	A. J. Lawrence.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1886.				
7839	Cape Vincent	Seizure	Nov. 8	$153.00	H. A. Church	$38.25	Oliver Benore.
7840	Puget Sound	do	Nov. 10	8.20	Jas. Furlong	2.87	2 pounds opium.
7841	do	do	do	58.88	Chin Wo, informer.	14.72	10 lbs. opium.
					J. H. Price, seizer	4.56	
7842	do	do	do	182.30	Geo. W. Poor, informer.	45.57	30 lbs. opium.
					A. D. Attridge, seizer.	15.10	
7843	do	do	do	33.50	S. Nugent, informer.	8.37	2½ lbs. opium.
					Jas. Furlong, seizer.	3.29	
7844	do	do	do	14.08	Chas. J. Mulkey	4.92	2 pounds opium.
7845	do	do	do	3.99	F. C. Swayzee	1.39	1½ pounds opium.
7846	do	do	do	19.67	James Furlong	6.88	3 pounds opium.
7847	do	do	do	11.19	do	3.91	8 pounds opium.
7848	do	do	do	61.59	A. H. Wintrode	21.55	17½ pounds opium.
7849	do	do	do	1.96	do	.68	½ pound opium.
7850	do	do	do	151.65	S. Nugent, inf'r	37.91	20 pounds opium.
					Jas. Furlong, seizer.	17.60	
7851	do	do	do	362.02	Hugh Edgar, inf'r	90.50	40 pounds opium.
					Chas. J. Mulkey, sz'r	49.88	
7852	do	do	do	25.23	Hugh Edgar, inf'r	6.30	2 pounds opium.
					Chas. J. Mulkey, sz'r	2.24	
7853	do	do	do	57.82	John Kelley	14.45	4½ pounds opium.
					Joel S. Jones	5.31	
7854	do	do	do	6.74	Chas. J. Mulkey	2.35	1½ pounds opium.
7855	do	do	do	6.88	do	2.40	Do.
7856	do	do	do	288.84	I. M. Hicks, inf'r	62.21	20 pounds opium.
					J. H. Price, seizer	21.58	
7857	do	do	do	2.02	Joel S. Jones	70	½ pound opium.
7858	do	do	do	166.83	Chin Wo, informer	41.70	13 pounds opium.
					J. H. Price, seizer	15.30	
7859	do	do	do	19.34	T. J. Robinson, inf'r.	4.83	1½ pounds opium.
					Chas. J. Mulkey, sz'r	1.79	
7860	do	do	do	32.71	T. J. Robinson, inf'r.	8.17	2½ pounds opium.
					Chas. J. Mulkey, sz'r	3.10	
7861	do	do	do	64.25	T. J. Robinson, inf'r.	16.06	5 pounds opium.
					Chas. J. Mulkey, sz'r	5.90	
7862	do	do	do	16.84	Chas. J. Mulkey	5.89	7½ pounds opium.
7863	do	do	do	4.07	Charles J. Mulkey	1.42	1½ pounds opium.
7864	do	do	do	2.94	do	1.02	1 pound opium.
7865	do	do	do	1.33	do	.46	½ pound opium.
7866	do	do	do	1.59	W. G. Ronald	.55	1½ pounds opium.
7867	do	do	do	2.18	do	.79	1 pound opium.
7868	do	do	do	15.84	do	5.54	5 pounds opium.
7869	do	do	do	16.27	Gilbert Rhodes	5.69	2½ pounds opium.
7870	do	do	do	32.29	Gilbert Rhodes, informer.	8.07	3 pounds opium.
					A. H. Wintrode, seizer.	2.23	
7871	do	do	do	48.06	Gilbert Rhodes	12.01	Liquors.
7872	do	do	do	308.45	do	77.11	31 pounds opium.
7873	do	do	do	109.83	Gilbert Rhodes, informer.	27.45	10 pounds opium
					W. F. Fennimore, seizer.	7.15	
7874	do	do	do	232.75	Gilbert Rhodes, informer.	58.18	20 pounds opium
					A. L. Blake, seizer.	24.58	
7875	do	do	do	63.23	Gilbert Rhodes	15.80	5½ pounds opium.
7876	do	do	do	4,895.60	Gilbert Rhodes, informer.	416.44	402½ pounds of opium.
					W. S. Minty, seizer.	416.44	
7877	do	do	do	1,829.65	Gilbert Rhodes, informer.	160.79	148½ pounds of opium.
					A. H. Wintrode, seizer.	160.79	
7878	do	do	do	32,352.90	Chung Lung Chin, informer.	3,000.00	3,011 pounds of opium.
7879	do	do	do	129.65	E. A. Gardner	32.41	Quing Linn.
7880	do	do	do	577.30	do	144.32	50 pounds opium.
7881	do	do	do	127.32	do	31.83	11½ pounds opium.
7882	do	do	do	55.35	S. Nugent, informer	13.83	5 pounds opium.
					Frank H. Woodley, seizer.	1.33	
7883	Vermont	do	Nov. 15	101.90	Chas. E. Nelson	35.66	1 team.
7884	do	do	do	16.80	do	5.88	1 cow.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1886.				
7885	Montana and Idaho	Seizure	Dec. 9	$139.00	Peter Blow	$46.65	16 horses.
7886	New York	Duty 155	Dec. 18	795.20	N. W. Bingham	198.80	E. Pouquet & Co.
7887	do	Duty 156	do	4,032.80	do	1,008.20	A. Origet.
7888	New Orleans	Seizure	Dec. 21	33.57	Chas. M. Strong	8.39	Schooner *Snowdrop.*
7889	Brazos	do	Dec. 23	6.78	L. Hinojosa J. Paz Garza	2.37	1 horse.
7890	do	do	do	6.60	J. P. O'Shaughnessy. Wm. H. Schmidt	2.31	3 mares.
7891	do	do	do	5.74	John Clasner	2.00	2 horses.
7892	do	do	do	5.94	do	2.07	2 mares.
7893	Detroit	do	do	9.10	John Higgs	3.18	Clothes.
7894	do	do	do	19.57	do	6.94	Do.
7895	do	do	do	15.75	do	5.51	Scarfs.
7896	do	do	do	3.80	do	1.33	Boots.
7897	do	do	do	4.00	H. S. Smith	1.40	Gloves.
7898	do	do	do	9.10	John Higgs	3.18	Clothing.
7899	do	do	do	5.00	T. E. McDonough	1.75	Lace.
			1887.				
7900	Genesee	Duty 157	Jan. 15	350.93	Paul V. Grolp	87.73	Costikgan Bros.
7901	Champlain	Seizure	Jan. 24	41.60	P. K. Delaney	14.56	1 team.
7902	do	do	do	26.00	do	6.50	1 horse.
7903	do	do	do	32.97	W. G. McCulloch, informer. P. K. Delaney, seizer.	8.24 8.23	2 dozen tablecloths.
7904	do	do	do	150.00	John Butler, inf'r. P. K. Delaney, seizer.	37.50 31.00	2 horses.
7905	do	do	do	20.35	P. K. Delaney	7.12	1 horse.
7906	do	do	do	73.00	do	25.55	Do.
7907	do	do	do	110.00	James McCoy, inf'r. P. K. Delaney, seizer.	27.50 22.75	Do.
7908	do	do	do	230.00	do	57.50 50.00	Do.
7909	Aroostook	do	Jan. 25	35.00	L. S. Strickland	7.29	1 mare.
7910	do	do	do	32.51	I. Langley, inf'r E. W. Lonney, seizer.	8.12 5.12	2 oxen.
7911	do	do	do	19.89	M. Bryson, inf'r. E. W. Lonney, seizer.	4.97 3.75	Do.
7912	do	do	do	30.97	do	7.74 5.86	1 horse.
7913	do	do	do	9.19	E. W. Lonney	3.21	1 mare.
7914	do	do	do	50.00	I. Langley	12.50	2 horses.
7915	do	do	do	40.00	do	10.00	1 mare.
7916	do	do	do	24.00	D. W. Sypher	6.00	Do.
7917	do	do	do	31.75	James S. Fox	7.93	5 bbls. potatoes.
7918	do	do	do	70.00	M. Bryson	17.50	1 horse.
7919	do	do	do	32.00	L. R. Drew, inf'r. W. T. Spear, seiz'r.	8.00 6.20	1 team.
7920	do	do	do	54.00	T. J. Pierce	13.50	2 horses.
7921	do	do	do	9.66	John A. Nadeau	3.38	1 harrow.
7922	Niagara	do	do	10.00	A. T. Cudaback	3.50	Silk, etc.
7923	Passamaquoddy	do	do	71.05	Geo. H. Emerson	24.86	Boat, lambs, etc.
7924	Detroit	do	Jan. 26	.72	Frank Bailey	.25	Whisky.
7925	do	do	do	1.08	George King	.37	Do
7926	do	do	do	1.03	O. D. Kingsley	.36	Do
7927	do	do	do	5.69	Frank Bailey	1.99	Dress goods.
7928	do	do	do	14.00	E. B. Rowland	4.90	Silk.
7929	do	do	do	2.20	T. E. McDonough	.77	Linen goods.
7930	do	do	do	1.15	do	.40	Scarfs.
7931	do	do	do	1.10	do	.38	Handkerchiefs.
7932	do	do	do	1.00	do	.35	Gloves.
7933	New Orleans	do	Feb. 8	118.66	A. B. Nugon	29.66	2,500 cigars.
7934	San Francisco	do	Feb. 11	171.17	R. N. Cochran H. Tucker	59.90	100 boxes opium.
7935	do	do	Feb. 10	57.45	M. C. Southard	20.10	1 trunk, etc.
7936	do	do	do	36.00	Jeff. Powers	12.60	30 boxes opium.
7937	do	do	do	21.66	Jeff. Powers C. O. Donnell	7.58	8 boxes opium.
7938	do	do	do	58.93	E. McLaughlin *et al.*	20.62	11 boxes opium.
7939	do	do	do	37.18	do	13.01	7 boxes opium.
7940	do	do	do	108.30	E. M. Dean	37.90	40 boxes opium.
7941	do	do	do	5.41	Jeff. Powers *et al*	1.89	2 boxes opium.
7942	do	do	do	32.25	do	11.28	13 boxes opium.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer of seizer.	Compensation.	Description of the case.
			1887.				
7943	San Francisco	Seizure	Feb. 10	$81.07	E. McLaughlin	$28.37	40 boxes opium.
7944	do	do	do	35.20	do	12.32	13 boxes opium.
7945	do	do	do	18.96	do	6.63	60 handkerchiefs.
7946	do	do	do	5.41	R. N. Cochran	1.89	2 boxes opium.
7947	do	do	do	18.88	E. McLaughlin *et al*	6.60	12 boxes opium.
7948	do	do	do	8.92	John Critcher	3.12	10 boxes opium.
7949	do	do	do	1.90	E McLaughlin	.66	2 silk mats.
7950	do	do	do	45.25	J. J. McGovern *et al*	15.83	31 boxes opium.
7951	do	do	do	210.68	H. Tucker *et al*	73.73	183 boxes opium.
7952	do	do	do	395.98	H. W. Brown *et al*	138.59	154 boxes opium.
7953	do	do	do	107.56	H. Tucker *et al*	37.64	82 boxes opium.
7954	do	do	do	285.92	do	100.07	89 boxes opium.
7955	Saluria	do	Feb. 11	4.50	J. W. Canterbury	1.57	3 horses.
7956	do	do	do	18.15	W. N. Cooke	6.35	2 horses.
7957	do	do	do	10.05	J. W. Canterbury	3.51	3 mares.
7958	New York	Duty 158	do	1,887.20	Paul V. Grolp	200.00	E. Goudstikker.
7959	Corpus Christi	Seizure	Feb. 15	26.39	W. J. Clifford; V. Morel; Wm. Foster	9.23	6 bags wool.
7960	do	do	do	20.95	Victor Morel	7.33	16 bags corn.
7961	do	do	do	4.00	do	1.40	1 horse.
7962	do	do	do	1.85	do	.64	2 horses.
7963	do	do	do	2.65	W. C. Horgan; J. R. Barnard, inf'r.	.92	1 horse and tobacco.
7964	do	do	do	16.37	Victor Morel	5.72	4 animals
7965	do	do	do	21.60	do; Wm. S. Dorethy	7.56	5 animals.
7966	do	do	do	8.54	G. B. Broadwater	2.98	3 horses.
7967	Boston	do	Feb. 25	874.55	Geo. E. Towle	250.00	Emily Rigby.
7968	Aroostook	do	Feb. 26	34.00	J. C. Smith	8.50	1 horse, etc.
7969	do	do	do	8.34	do	2.91	Do.
7970	do	do	do	27.08	J. A. Nadeau	9.47	2 oxen.
7971	do	do	do	28.34	J. C. Smith	9.91	2 cows, etc.
7972	do	do	do	8.34	do	2.08	1 horse.
7973	do	do	do	191.96	E. W. Lowney	47.99	Team and oats.
7974	do	do	do	226.04	do	56.51	2 mares, etc.
7975	do	do	do	19.14	Peter C. Keegan	6.69	1 mare, etc.
7976	do	do	do	20.83	J. A. Nadeau	5.20	1 horse, etc.
7977	do	do	do	40.00	J. C. Smith	10.00	1 stallion.
7978	do	do	do	20.00	do	5.00	1 sled.
7979	do	do	do	28.86	do	7.21	98 bushels oats.
7980	do	do	do	14.58	J. A. Nadeau	3.64	1 horse.
7981	do	do	do	3.00	do	1.05	1 stove.
7982	do	do	do	30.20	E. W. Lowney	7.55	2 horses.
7983	do	do	do	107.77	J. C. Smith	26.94	Do.
7984	do	do	do	172.70	do	43.17	2 mares.
7985	Puget Sound	do	Feb. 25	8,909.51	H. F. Beecher, seizer	*2,000.00	3,011½ lbs. opium, steamer *Idaho*.
7986	do	do	do	8,009.51	G. M. Rouse	*1,000.00	Do.
7987	Aroostook	do	Feb. 26	41.20	E. W. Lowney	10.30	2 horses.
7988	do	do	do	33.33	do	8.33	1 mare.
7989	do	do	do	24.00	J. C. Smith	6.00	1 mare.
7990	do	do	do	18.19	E. W. Lowney	4.54	90 bush. potatoes.
7991	do	do	do	58.33	do	14.58	1 horse.
7992	do	do	do	3.45	J. A. Nadeau	1.20	1 plow.
7993	do	do	do	4.62	do	1.61	1 stove.
7994	do	do	do	8.00	E. W. Lowney	2.80	1 horse.
7995	do	do	do	45.00	J. C. Smith	11.25	2 horses.
7996	Passamaquoddy	do	Mar. 4	18.49	N. S. McGarry	6.47	12 boxes glass.
7997	New York	do	Mar. 5	55.50	P. Gibbons, infor.ner; A. McCort, seizer	13.87; 9.25	Silk.
7998	do	do	do	30.00	J. M. Wilson	10.50	Music.
7999	do	do	do	3.55	E. B. Lynch	1.24	Dress goods.
8000	do	do	do	3.46	A. McCort *et al*	1.21	350 cigars.
8001	do	do	do	10.03	do	3.51	1,300 cigars.
8002	do	do	do	18.09	do	6.33	1,200 cigars.
8003	do	do	do	201.65	J. B. Wooley, inf'r.; M. Britton, seizer	50.41; 45.75	Ivory carvings.
8004	do	do	do	113.95	J. B. Wooley, inf'r; M. Britton, seizer	28.48; 20.05	Do.
8005	do	do	do	252.00	J. B. Wooley, inf'r; M. Britton, seizer	63.00; 45.50	Do.
8006	do	do	do	71.25	J. B. Wooley, inf'r; M. Britton, seizer	17.81; 14.10	Shawls.
8007	do	do	do	246.88	P. McGee, informer; A. McCort, seizer	61.72; 7.47	5,300 cigars.
8008	do	do	do	45.43	J. B. Woolley, informer; M. Britton, seizer	11.35; 10.15	Coat, etc.

* Payment suspended by order of the Secretary.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1887.				
8009	New York	Seizure	Mar. 5	$17.81	A. McCort *et al*	$6.23	Shawls.
8010	do	do	do	2.18	T. J. Donohue	.76	200 cigars.
8011	do	do	do	11.02	T. Brown *et al*	3.85	500 cigars.
8012	do	do	do	19.24	A. McCort *et al*	6.73	Umbrellas.
8013	do	do	do	2.72	Theodore Cochen	.95	Earthenware.
8014	do	do	do	3.92	T. Brown	1.37	200 cigars.
8015	do	do	do	8.93	W. V. Leggett *et al*	3.12	Fancy goods.
8016	do	do	do	24.06	A. McCort *et al*	8.42	Do.
8017	do	do	do	3.84	do	1.34	800 cigars.
8018	do	do	do	41.86	do	14.65	Spirits, etc.
8019	do	do	do	11.18	A. McCort *et al*, seizers. Peter Hansen, informer.	3.91 12.32	9 boxes cigars.
8020	do	do	do	8.80	Geo. W. Wright	3.08	1,000 cigars.
8021	do	do	do	143.37	F. Bernard, inform'r J. B. Peck *et al.*, seizers.	35.84 30.34	1 pearl.
8022	do	do	do	25.83	A. McCort *et al*	9.04	5,500 cigars.
8023	do	do	do	1.94	W. B. Rogers *et al*	.67	Wool cloths.
8024	do	do	do	32.55	W. A. Tollbert *et al*	11.39	1,400 cigars.
8025	Detroit	do	Mar. 15	1.00	T. E. McDonough	.35	Silk handkerchiefs.
8026	do	do	do	1.01	do	.35	Do.
8027	do	do	do	.68	do	.22	Do.
8028	do	do	do	1.10	do	.38	Linen handkerchiefs.
8029	do	do	do	5.90	do	2.06	Cotton lace.
8030	Boston	do	do	35.09	W. J. Farrall	8.77	4½ gallon gin, steamer *Worcester*.
8031	New York	Duty, 159	Mar. 16	760.60	Henry Corwin	190.15	Linoleums and oil-cloths, T. J Keveney & Co.
8032	Niagara	Seizure	do	56.00	A. T. Cudaback	19.60	1 dress and 1 watch.
8033	do	do	do	12.00	do	4.20	1 suit of clothes.
8034	Baltimore	Fine	Mar. 22	550.00	Charles H. Hill	150.00	Steamers *Albano* and *Gazelle*, smuggled gin.
8035	Saluria	Seizure	Mar. 24	30.80	W. N. Cooke	10.78	5 horses.
8036	do	do	do	12.90	do	4.51	6 horses.
8037	do	do	do	9.53	C. R. Wulfing	3.33	2 mules.
8038	do	do	do	15.41	do	5.39	3 mules.
8039	do	do	do	24.06	do	8.42	5 horses.
8040	do	do	do	5.05	E. M. Phelps	1.76	1 horse.
8041	do	do	do	36.97	J. W. Canterbury	12.93	2 horses.
8042	Portsmouth	do	do	140.49	H. S. Beebe	35.12	1 bay mare.
8043	do	do	do	103.00	N. L. Shurtleff, informer. Walter Drew, seizer.	25.75 19.73	1 team.
8044	do	do	do	83.00	E. A. Jordan, inf'r. Walter Drew, seizer.	20.75 15.75	1 mare.
8045	Champlain	do	Apl. 5	20.50	Patrick Mooney, informer. P. H. Delaney, seizer.	5.12 3.37	2 cows.
8046	do	do	do	444.37	A. Loomis, inf'r. R. R. Humphrey, seizer.	111.09 96.59	4 horses.
8047	New York	Fine	Apl. 25	430.45	J. B. Woolley	107.61	Str. *Oxfordshire*.
8048	Corpus Christi	Seizure	Apl. 29	5.65	W. S. Dorethy	1.97	Mescal.
8049	do	do	do	7.15	M. Brennan	2.50	Skiff, etc.
8050	do	do	do	2.54	Wm. Foster	.88	Horse and saddle.
8051	do	do	do	15.25	P. S. Coy	5.33	2 mares.
8052	Vermont	Duty 160	do	150.00	N. Winslow	37.50	H. A. Channell (corn meal).
8053	do	Duty 161	do	134.40	do	33.60	Geo. S. Carpenter (corn meal).
8054	Chicago	Seizure	do	209.45	G. W. Whitehead	73.30	J. B. Gaylord (team).
8055	Passamaquoddy	do	do	22.50	N. S. McGarry	7.87	Castor-oil.
8056	Detroit	do	May 3	63.22	John Higgs	22.12	1 seal-skin cloak.
8057	Paso del Norte	do	May 9	19.75	George Darling, informer. Seaman Field, seizer.	4.93 3.68	2 horses.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1887.				
8058	Paso del Norte..	Seizure.	May 9	$103.70	John Perry, inf'r Seaman Field, seizer.	$25.92 29.36	Mules.
8059	....do	...do	...do	42.05	J. P. O'Ferrall	14.71	Opals.
8060	....do	...do	...do	5.05	C. B. Sheridan	1.76	Cigars.
8061	....do	...do	...do	80.10	J. L. Dwyer	28.03	Shawls.
8062	....do	...do	...do	6.45	C. B. Sheridan	2.25	Horses, etc.
8063	....do	...do	...do	4.20	S. C. Smith	1.05	Do.
8064	....do	...do	...do	3.30	C. B. Sheridan	1.15	Blankets.
8065	....do	...do	...do	39.30	...do	13.75	Dresses.
8066	New York	Duty 162	...do	950.50	Andrew Geyer	237.62	Israel Hamburger.
8067	Brazos	Seizure.	May 13	3.60	W. H. Schmidt F. S. Champion	1.26	1 horse.
8068	....do	...do	...do	2.00	John Clasner F. W. S. Marshal	.70	Do.
8069	....do	...do	...do	4.73	M. Werbiski	1.66	Do.
8070	...do	...do	...do	5.40	W. H. Schmidt	1.89	Do.
8071	...do	...do	...do	5.40	F. S. Champion	1.89	Do.
8072	....do	...do	...do	2.39	J. P. Cothingham	.83	11 pairs hose.
8073	....do	...do	...do	1.36	G. M. Putegnat	.47	Brandy.
8074	....do	...do	...do	1.69	L. Hinojosa J. Paz Garza	.59	Leather.
8075	....do	...do	...do	1.87	J. P. Cothingham G. M. Putegnat	.64	2 shawls.
8076	....do	...do	...do	1.41	J. P. Cothingham	.49	Tidies.
8077	....do	...do	...do	1.75	W. F. Dennett	.61	Blanket.
8078	....do	...do	...do	1.71	G. W. Miller	.59	Combs.
8079	....do	...do	...do	1.48	...do	.51	Mescal.
8080	....do	...do	...do	10.86	M. Werbiski J. P. Cothingham	3.80	Saddle.
8081	....do	...do	...do	5.03	....do	1.76	8 mirrors.
8082	....do	...do	...do	1.15	....do	.40	3 mirrors.
8083	....do	...do	...do	1.05	...do	.36	Thread.
8084	....do	...do	...do	1.28	G. W. Miller	.44	Lace.
8085	....do	...do	...do	13.30	A. Dean J. M. Franz	4.65	Animals.
8086	....do	...do	...do	7.20	W. H. Schmidt F. S. Champion	2.52	Do.
8087	....do	...do	...do	5.80	....do	2.03	Horse.
8088	....do	...do	...do	13.25	M. Werbiski J. P. Cothingham	4.63	Do.
8089	....do	...do	...do	1.75	....do	.61	Do.
8090	....do	...do	...do	1.60	W. H. Schmidt F. S. Champion	.56	Do.
8091	....do	...do	...do	1.51	M. Werbiski J. P. Cothingham	.52	Sugar.
8092	....do	...do	...do	13.95	....do	4.88	Horse.
8093	....do	...do	...do	7.19	....do	2.51	Sugar.
8094	....do	...do	...do	12.00	R. E. Margo	4.20	Mule.
8095	....do	...do	...do	1.29	J. P. Cothingham	.45	Horse.
8096	....do	...do	...do	4.02	....do	1.40	Do.
8097	....do	...do	...do	15.20	Victor Sebree J. Paz Garza	5.32	Horses.
8098	....do	...do	...do	3.13	M. Werbiski G. M. Putegnat	1.09	Do.
8099	....do	...do	...do	4.39	M. Benavides	1.53	Do.
8100	....do	...do	...do	5.06	....do	1.77	Oranges.
8101	....do	...do	...do	1.82	J. P. Cothingham	.63	Brushes.
8102	....do	...do	...do	3.57	M. Werbiski J. P. Cothingham	1.24	Saddle.
8103	....do	...do	...do	2.41	G. W. Miller	.84	Lace.
8104	....do	...do	...do	1.98	....do	.69	Calf-skin.
8105	....do	...do	...do	1.83	G. M. Putegnat	.64	Sugar.
8106	....do	...do	...do	1.80	G. W. Miller	.63	Chocolate.
8107	....do	...do	...do	1.62	M. Werbiski	.56	Sugar.
8108	....do	...do	...do	3.23	...do J. P. Cothingham	1.13	Do.
8109	....do	...do	...do	2.84	....do	.99	Do.
8110	....do	...do	...do	2.70	....do	.94	Do.
8111	....do	...do	...do	17.80	Victor Sebree, etc	6.23	Horses.
8112	...do	...do	...do	26.30	....do	9.20	Do.
8113	....do	...do	...do	6.52	R. E. Margo, etc	2.28	Do.
8114	....do	...do	...do	1.15	W. H. Schmidt, etc	.40	Do.
8115	....do	...do	...do	1.45	W. H. Schmidt	.50	Do.
8116	...do	...do	...do	3.20	F. S. Champion	1.12	Do.
8117	Corpus Christi	...do	May 23	9.50	Helen Parron	3.32	Woolens.
8118	....do	...do	...do	19.60	G. B. Broadwater	6.86	Silks.
8119	....do	...do	...do	9.76	Victor Morel	3.41	Liquors.

Detailed report of awards of compensation, in lieu of moieties, etc.—Continued.

No.	District.	Case.	Date.	Net proceeds.	Informer or seizer.	Compensation.	Description of the case.
			1887.				
8120	Corpus Christi	Seizure	May 23	$4.89	J. R. Barnard, inf'r W. C. Horgan	$1.71	1 mule.
8121	do	do	do	2.44	J. R. Barnard, inf'r W. C. Horgan	.85	1 horse.
8122	do	do	do	9.18	do Frank Stakes	3.21	Tobacco.
8123	do	do	do	18.72	Victor Morel	6.55	1 horse.
8124	Puget Sound	do	June 2	4,652.97	Michael Donovan	2,000.00	350 pounds opium.
8125	Saluria	do	June 3	401.12	George Carter, inf'r. J. W. Canterbury, seizer.	100.28 91.22	Four oxen.
8126	do	do	do	369.90	George Carter, inf'r E. M. Fly, seizer	92.47 88.12	Do.
8127	San Francisco	do	June 4	11.24	E. A. Holmes	3.93	2 pounds opium.
8128	do	do	do	5.29	H. Tucker *et al*	1.85	90 lbs. tobacco.
8129	do	do	do	45.37	do	15.87	22 boxes opium.
8130	do	do	do	39.18	do	13.71	19 boxes opium.
8131	do	do	do	1.84	do	.64	42 lbs. tobacco.
8132	do	do	do	14.83	do	5.19	18 lbs. tobacco.
8133	do	do	do	40.65	do	14.22	144 lbs. tobacco.
8134	do	do	do	120.83	do	42.29	19 pounds opium.
8135	do	do	do	48.99	do	19.14	7½ pounds opium.
8136	do	do	do	22.90	do	8.01	109 lbs. tobacco.
8137	do	do	do	20.79	M. W. Stackpool	7.27	30 cans opium.
8138	do	do	do	7.68	H. Tucker *et al*	2.68	121 lbs. tobacco.
8139	do	do	do	22.91	Dan'l McSweeney	8.01	10 boxes opium.
8140	do	do	do	15.24	do	5.33	7 boxes opium.
8141	do	do	do	6.49	H. Tucker *et al*	2.27	27 boxes opium.
8142	do	do	do	9.83	do	3.44	Shawls, etc.
8143	do	do	do	11.93	W. G. Lee	4.17	8 boxes opium.
8144	do	do	do	11.13	E. A. Holmes	3.89	3 boxes opium.
8145	do	do	do	11.61	H. Tucker *et al*	4.06	127 boxes opium.
8146	do	do	do	257.78	do	90.22	24 boxes opium.
8147	do	do	do	3.74	A. Ulp	1.30	Fans.
8148	do	do	do	294.65	H. Tucker *et al*	103.12	50 boxes opium.
8149	do	do	do	6.01	do	2.10	4 bottles opium.
8150	do	do	do	14.81	do	5.18	Silk handkerchiefs.
8151	do	do	do	4.12	Geo. A. Warren	1.44	2 boxes opium.
8152	do	do	do	47.74	H. Tucker *et al*	16.70	20 boxes opium.
8153	do	do	do	30.03	J. Power *et al*	10.51	12 boxes opium.
8154	do	do	do	5.06	H. Tucker *et al*	1.77	38 lbs. tobacco.
8155	do	do	do	114.58	do	40.10	48 boxes opium.
8156	do	do	do	1.76	do	.61	Jewelry.
8157	do	do	do	7.75	do	2.71	105 lbs. tobacco.
8158	do	do	do	54.69	J. P. Skelton	19.14	20 boxes opium.
8159	do	do	do	2.90	H. Tucker *et al*	1.01	48 lbs. tobacco.
8160	do	do	do	17.16	T. J. Smith	6.00	3 pounds opium.
8161	do	do	do	39.78	H. Tucker *et al*	13.72	15 pounds opium.
8162	do	do	do	63.15	P. H. Bagley	22.10	59 pounds opium.
8163	do	do	do	6,046.46	J. T. Fogarty J. H. Breeze	2,116.26	2,944 boxes opium.
8164	do	do	do	153.15	H. Tucker *et al*	53.60	100 boxes opium.
8165	do	do	do	17,217.01	John T. Fogarty J. H. Breeze H. H. Scott	6,025.95	2,784 lbs. opium.
	Total					29,818.87	

RECAPITULATION.

Amount of appropriation in sundry civil, approved August 4, 1886, for compensation in lieu of moieties	$30,000.00
Total amount awarded	$29,818.87
Number of awards made	479

0TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 42.

TREATY STIPULATIONS WITH CHICKASAW INDIANS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation to fulfill treaty stipulations with the Chickasaw Nation of Indians.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January* 5, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior of the 20th ultimo, submitting an estimate for an appropriation of $240,164.58 to fulfill treaty stipulations with the Chickasaw Nation of Indians under the fourth article of treaty of June 22, 1852, as per finding of the United States Court of Claims therewith.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 20, 1887.

SIR: I have the honor to inclose herewith for presentation to Congress, in accordance with the provisions of section 2 of the act of July 7, 1884 (23 Stat., 254), copy of a letter of the 17th instant from the Commissioner of Indian Affairs, with the estimate of appropriation noted therein, in the sum of $240,164.58 required to fulfill treaty stipulations with the Chickasaw Nation of Indians under the 4th article of the treaty with the Chickasaws of June 22, 1852, as per certified copy of the findings of the United States Court of Claims, also herewith inclosed. The amount named in the estimate is the principal sum found due to said Indians by the court, without interest.

The court remarks in its findings on the subject of interest that—

In an action between individuals interest would also be allowed, for the issue presented is one of unauthorized disbursement by a trustee of trust funds expressly stipulated to be held invested in interest-bearing securities.

We refrain, however, from expressing any opinion on this subject, as the question must necessarily be taken to the legislative department of the Government, which alone has power to grant relief, which will consider the equities of the case, and which will decide whether it is one wherein the doctrine should be waived that, as the sovereign does no wrong and is ever ready and willing to pay just debts, the Government pays no interest.

The findings of fact and the opinion of the Court of Claims in the case have been adopted as the decision of the Department in the matter.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR, OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 17, 1887.

SIR: I have the honor to acknowledge the receipt of your communication of the 12th instant, returning the papers in the matter of the claim of the Chickasaw Nation *vs.* the United States, under the fourth article of the treaty of June 22, 1852 (10 Stats., 974-976), with advice that, after a careful consideration of the case, you have concluded to adopt as the decision of the Department in the matter the findings and opinion of the Court of Claims thereon, as set forth in the certified copy of opinion filed April 25, 1887.

In this communication this office is instructed to report the case to the Department, with such brief statement of the history relating thereto as may be necessary, to the end that it may be presented for the action of Congress.

In reply, I have to state that under treaties made with the Chickasaw Nation in 1832 and 1834, a large trust fund was created for their benefit from the net proceeds of sale of their lands lying east of the Mississippi River.

This fund was deposited in the United States Treasury prior to the year 1839, subject to reductions on account of certain charges for specific expenses authorized by said treaties. Prior to 1852, the Chickasaw Indians had complained that errors existed in the accounts of their trust funds kept at the Treasury Department, and that in consequence of such errors the balance had been represented as much less than its actual amount; therefore, the semi-annual payments of interest which they had received on their trust funds were less than they were entitled under the said treaties to receive, and they requested that the matter be corrected. The alleged errors of account were divided into two classes: 1st, those pertaining to charges for disbursements from the Chickasaw general fund and, 2d, those pertaining to the orphan and incompetent funds.

By treaty with the Chickasaw Nation, dated June 22, 1852, the fourth article was inserted to correct these alleged errors, as follows:

"ARTICLE 4. The Chickasaws allege that in the management and disbursement of their funds by the Government they have been subjected to losses and expenses which properly should be borne by the United States. With the view, therefore, of doing full justice in the premises, it is hereby agreed that there shall be, at as early a day as practicable, *an account stated*, under the direction of the Secretary of the Interior, exhibiting in detail all the moneys which from time to time have been placed in the Treasury to the credit of the Chickasaw Nation resulting from the treaties of 1832 and 1834 and all the disbursements made therefrom. And said account as stated shall be submitted to the Chickasaws who shall have the privilege, within a reasonable time, of filing exceptions thereto, and any exceptions so filed shall be referred to the Secretary of the Interior, who shall adjudicate the same according to the principles of law and equity, and his decision shall be final and conclusive on all concerned.

"It is also alleged by the Chickasaws that there are numerous cases in which moneys held in trust by the United States for the benefit of orphan and incompetent Chickasaws have been wrongfully paid out to persons having no right to receive the same. It is therefore further agreed that all such cases shall be investigated by the agent of the United States, under the direction of the Secretary of the Interior; and if it shall appear to the satisfaction of said Secretary that any of the orphans and incompetents have been defrauded by such wrongful payments, the amount thus misapplied shall be accounted for by the United States as if no such payment had been made: *Provided*, That the provisions of this article shall not be so construed as to

impose any obligation on the United States to reimburse any expenditures heretofore made in conformity with the stipulations contained in the treaties of 1832 and 1834: *And povided further*, That the United States shall not be liable to repay money held in trust for the benefit of orphan and incompetent Chickasaws in any case in which payment of such moneys has been made upon the recommendation or certificate of the persons appointed for that purpose in the fourth article of the treaty of 1834, or of their successors, and in other respects in conformity with the provisions of that article: *And provided further*, That the United States shall not be held responsible for any reservation of land, or of any sale, lease, or other disposition of the same, made, sold, leased, or otherwise disposed of, in conformity with the several provisions of said treaties of 1832 and 1834."

Prior to 1868 the United States failed to perform the duties imposed by the above treaty stipulations. In 1868 an account was stated, under direction of the Secretary of the Interior, and submitted to the said nation. In 1869 the Chickasaws filed their exceptions to this account with the Interior Department. It remained on file until 1883, at which time it was transmitted to the Court of Claims under the provisions of the second section of the act of March 3, 1883. The agent of the United States, under the direction of the Secretary of the Interior, in 1869 investigated the cases of alleged illegal disbursements of the orphan and incompetent funds, and closed his report in that year. This report remained on file until its transmission to the Court of Claims in 1883.

On the 23d day of May, 1887, the Court of Claims caused its findings of facts and conclusions of law in the case to be filed in this Department, showing that the Chickasaw general fund and the Chickasaw incompetent fund had been subjected to erroneous reductions on the books of the United States, as follows:

Chickasaw general fund:	
Payments of transportation and demurrage to S. Buckner (charged against the trust fund prior to December 31, 1840)	$58,299.00
Payments to conductors of emigration (charged prior to December 31, 1840)	26,563.68
Payment to assignees of William M. Gwinn (charged prior to December 21, 1844)	56,021.49
	140,884.17
Chickasaw incompetent fund:	
Payments from incompetent fund (charged prior to December 31, 1840)	99,280.41
Total	240,164.58

In order that the matter may be laid before Congress I have caused to be prepared an estimate of appropriations required to pay the award made under the treaty. The question of interest has not been considered in preparing this estimate, in view of the absence of instructions from the Department in the premises. I submit herewith said estimate, together with the certified copy of the findings of the Court of Claims.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

Estimate of appropriation required to fulfill stipulations contained in the fourth article of treaty with the Chickasaw Nation of Indians, dated June 22, 1852.

Amount necessary to reimburse the general fund of the Chickasaw Nation for moneys improperly disbursed from said fund, as ascertained by the Secretary of the Interior, as required by article 4 of the treaty with the Chickasaws dated June 22, 1852, $140,884.17;

Amount necessary to reimburse the Chickasaw incompetent fund for moneys improperly disbursed from said fund, as ascertained by the Secretary of the Interior, as required by article 4 of the treaty with the Chickasaws dated June 22, 1852, $99,280.41, total, $240,164.58.

[Court of Claims. Department Case No. 2.]

THE CHICKASAW NATION *v.* THE UNITED STATES.

FINDINGS OF FACT.

This case, referred to the Court of Claims by the honorable the Secretary of the Interior under the provisions of an act entitled "An act to afford assistance and relief to Congress and the Executive Departments in the investigation of claims and demands against the Government," approved March 3, 1883, having been heard by the court, Halbert E. Paine, esq., appearing in behalf of the claimants, and B. P. Dewees, esq., assistant attorney, appearing for the defense and protection of the interests of the United States, the court, upon the evidence, find the facts to be as follows:

I.

Pursuant to the provisions of the treaty between the United States and the Chickasaw Nation of June 22, 1852, an account was prepared under the direction of the Secretary of the Interior, exhibiting in detail all the moneys which from time to time had been placed in the Treasury to the credit of the Chickasaw Nation resulting from the treaties of 1832 and 1834 and all the disbursements made therefrom. This account was submitted to the Chickasaw Nation in the year 1868, and in the year 1869 that nation filed exceptions thereto in the Department of the Interior. While partial investigation has been made as to some of these exceptions no adjudication by the Secretary of the Interior has been had, and the United States have not accounted for any of the moneys alleged by the Chickasaw Nation to have been misapplied.

II.

May 8, 1883, the honorable the Secretary of the Interior transmitted the matter to this court by the following letter:

DEPARTMENT OF THE INTERIOR,
Washington, May 8, 1883.

To the United States Court of Claims, Washington, D. C.:

I have the honor to transmit herewith the papers, proofs, and documents pertaining to the disputed disbursements made by the United States from the funds of the Chickasaw Indians, and certain alleged wrongful payments made from the trust fund of the orphan and incompetent Chickasaws, the adjustment of which is provided for in Article 4 of the treaty of June 22, 1852 (10 Stat., 974–976).

The accounts of all moneys which from time to time have been placed in the Treasury to the credit of the Chickasaw Nation, resulting from the treaties of 1832 and 1834, and of all the disbursements made therefrom, have been prepared and submitted to the Chickasaw Indians as required by the treaty, and certain exceptions thereto have been filed by Holmes Colbert, commissioner for and on behalf of those Indians. The matter of alleged wrongful payments made from the orphan and incompetent Chickasaw trust fund has been investigated, and objections or exceptions to certain of those payments have been filed by the same party.

All the papers, herewith, in the case are more particularly enumerated in the accompanying report of the Commissioner of Indian Affairs dated the 7th instant.

The matters are respectfully transmitted to you for your consideration and action in accordance with the provisions of section 2 of the act of March 3, 1883, entitled "An act to afford assistance and relief to Congress and the Executive Departments in the investigation of claims and demands against the Government"; which reads as follows:

"SEC. 2. That when a claim or matter is pending in any of the Executive Departments which may involve controverted questions of fact or law, the head of such Department may transmit the same, with the vouchers, papers, proofs, and documents pertaining thereto, to said court, and the same shall be proceeded in under such rules as the court may adopt. When the facts and conclusions of law shall have been found, the court shall not enter judgment thereon, but shall report its findings and opinions to the Department by which it was transmitted for its guidance and action."

Very respectfully,

H. M. TELLER,
Secretary.

III.

Certain of the exceptions originally filed by the nation are now at this hearing withdrawn or modified, so that the issues presented are as to the following payments appearing on the accounts:

Payment to John Bell, president Branch Agricultural Bank of Mississippi	$20,000.00
Payment to William M. Gwin's assignees	56,021.49
Charge for clerk-hire in Washington	79,969.46
Transportation, S. Buckner	37,749.00
Transportation, S. Buckner	5,877.50
Demurrage, S. Buckner	14,672.50
Rations	199,098.03
Conductors of emigration	26,563.68
Payments from the incompetent fund	99,280.41
Payments from the orphans' fund	80,809.55
Total	610,041.62

IV.

April 12, 1836, John Bell, the president of the Branch Agricultural Bank of Mississippi, was informed by Mr. Cass, Secretary of War, that he had been selected to perform the duties in relation to the sales of Chickasaw reservations indicated in the ninth article of the regulations of February 5, 1836; regulations prescribing the mode in which the lands stipulated to be granted by the treaty of May 24, 1834, might be sold.

This ninth article provided that, should—

"The necessities of the seller and his situation, in the opinion of the said chiefs in council and of the agent, render it proper that a portion of the purchase-money shall be received by the seller for the relief of his wants before the funds belonging to him, which may be in the Treasury, can be drawn out and paid to him, it shall be competent for the said chiefs and agent to give a certificate stating their recommendation that a portion of the purchase-money should be thus paid, and expressing the amount. Whereupon the same may be presented either to the agent or to some person who may be thereafter expressly designated for that duty, and in whose hands a sufficient fund for this purpose shall be placed, under the regulations of the Treasury Department, who shall pay the amount to the proper Indian on the presentation of the certificate, taking his receipt therefor, witnessed by at least one respectable white person. * * *"

Bell was instructed that should the Treasury consider it proper that the requisite sums be paid out by him before their receipt in the Treasury Department no other arrangement for funds would be necessary; otherwise a requisition would issue in the usual form for such amount as might appear necessary, and he would receive from the Treasury a warrant therefor; for that purpose he was also instructed to transmit from time to time an estimate of the funds necessary.

April 14, 1836, the Secretary of War requested the Secretary of the Treasury to place $20,000 in the said bank to the credit of its president, Bell, to meet the expenditures under said ninth article of the regulations for the sale of Chickasaw reservations.

May 3, 1836, a warrant was issued by the Treasury Department in favor of said John Bell, as president, etc., for $20,000, and the same was remitted to him in a draft on William Edmonson, receiver of the land office at Pontotoc, Miss., into whose hands came the proceeds from the sale of Chickasaw lands. This warrant was drawn upon the Chickasaw fund and debited against it. In cashing the warrant the receiver used Chickasaw funds in his hands. The money was not required by said Bell for the benefit of the Indians; it was returned by him, covered into the Treasury, and March 29, 1837, was carried to the credit of the Chickasaw fund. In addition there was credited to the fund, August 12, 1836, the sum of $20,000, which properly showed the correct account. The credit of August 12, 1836 (appropriation warrant No. 3), arose in the following manner: The money advanced to Bell was sent him by a draft on Edmonson, receiver, who cashed it from Chickasaw funds then in his hands and made the following entry in his accounts: "To this amount paid president of the branch of the Agricultural Bank at Pontotoc, on Treasury warrant No. 1, $20,000." In the settlement of receiver's accounts for the year ending June 30, 1836, the Commissioner of the General Land Office and the First Comptroller of the Treasury gave him credit for this sum, and as this sum, proceeds of the Chickasaw lands, was thus withdrawn from the receiver and paid to Bell, the Chickasaw fund was credited with the amount, July, 26, 1836, by the Secretary of the Treasury's draft and covering-in warrant No. 4, paid by warrant No. 1, dated May 3, 1836, for $20,000. August 12, 1836, appropriation warrant No. 3 was issued, based upon said covering-in warrant and set-

ting said $20,000 to the credit of the Chickasaw fund. So that, at the close of the transaction, the Chickasaw account was debited once with $20,000 and was credited twice with $20,000, and showed a net balance of $20,000 in favor of the tribe, to which it was entitled.

This item has, since the hearing, been abandoned by the claimants.

V.

In 1844 William M. Gwin, a citizen of the United States, was appointed by the Chickasaw Nation their agent to attend generally to their business with the United States; as such agent he rendered valuable service. Under one of the powers of attorney given him he was to receive as compensation one-half of the interest on the State stocks in which Chickasaw funds were invested and as to which default had been made in the payment of interest. Surrendering what he had earned in fulfilling the agreement and all claims thereunder in deference to the wishes of Armstrong, superintendent of the Indian Territory, Gwin received in return another power of attorney, authorizing him to collect, for a fee named, certain other Chickasaw claims, to wit: In prosecuting his labors under his other powers Gwin had discovered that the Chickasaws were entitled to a credit of $112,042.99 for damaged flour and pork furnished by the United States under treaty stipulations, and he was given authority to collect this sum for a contingent fee of 50 per cent. The consideration given by Gwin for this contract was the discovery of the error, also labor done in making the collection, also claims alleged against the Chickasaws under the previous agreements, which were surrendered without compensation. This last agreement was sanctioned by the superintendent, Armstrong, in the following language:

"I confess I feel gratified that you of your own accord have given up one-half of the appropriation of interest, which your contract clearly entitles you to, for a different interest, which is got in part already, and if anything else is received it will be through your exertions. The interest entered into the general fund of the nation in such a way that if you are to receive what you clearly earn and is yours by the power of attorney, it might lead to bad feeling with the Chickasaws toward the chiefs. Not so with what you propose to substitute. The money from the Agricultural Bank and the provisions improperly purchased by the Government are already lost sight of by the Chickasaws. You may by great trouble and labor get some remuneration from the provision account. If you fail, you lose your labor. My object is, however, briefly to say that I will use my best exertions to effect the change. If I do not succeed (which I have no fear of), I will, of course, hold on to your power of attorney."

The contract for the 50 per cent. contingent on recovery of cost of provisions and flour begins as follows: "Memorandum of an agreement made and entered into between William M. Gwin, of the State of Mississippi, of the one part, and the chiefs, commissioners, and headmen of the Chickasaws, acting in behalf of nation, of the other part," and is signed by Isaac Albertson, Chief Bing-Lovi-Llon-Lovi, James Gamble, James Wolf, and Joseph Colbert. With these united four chiefs and headmen, who also subscribed the contract, and all the signatures were attested by the highest judicial functionary of the Chickasaw Nation. This power of attorney was signed in 1845. Gwin took some action under this power; five years thereafter Congress allowed the claim for the provisions and flour, and Gwin, through his assignees, Messrs. Corcoran & Riggs, received 50 per cent. thereof, to wit, $56,021.49. It does not appear that the Chickasaws protested against this payment at the time it was made or at the time objected to it.

VI.

At Pontotoc, Miss., February 17, 1837, the chiefs and headmen of the Chickasaw tribe addressed the President in substance as follows: Gladly saying that they were pleased with the prospect of obtaining among their friends and allies, the Choctaws (then in Indian Territory), a new and, as they hoped, a permanent home for their people, who were almost destitute and homeless; to that end they hoped the President would aid them to procure speedy removal to their new homes, and hoped that the necessary arrangements might be made by the first of the following May, when a considerable portion of their people would be ready to emigrate to the country which had been procured for them among the Choctaws. Instructed by the advice of a Chickasaw delegation which had just returned from the Choctaw Nation and had learned of the difficulties, privations, suffering, and expense attendant upon a removal of the tribe by land, the chiefs and headmen suggested—

"That one or more discreet persons be appointed to superintend the removal of such of their tribe as shall be in readiness to start in the ensuing spring; that it be the duty of such superintendent, under instructions from the Great Father, to take all the steps necessary to ascertain as near as may be the number of their people now

ready to remove and to provide means for their transportation and subsistence. That the salary of the superintendent [to be fixed] and all other necessary expenses be defrayed out of the fund of their nation, and that suitable precaution be taken to secure the faithful application of such money as may be paid to the superintendent.

"The chiefs and headmen further suggest to their Great Father, that for the purpose of carrying their people to their new home in the best manner instructions should be given to the superintendent to charter steam boats and purchase provisions in Kentucky or Tennessee, and that the steam-boats laden with the provisions should receive on board at some point on the Mississippi River, and also, perhaps, on the Tennessee River, such of their people as shall be ready, and land them at the mouth of the Canadian River, in the country of the Choctaws. And it will also be necessary that some mode be provided of carrying them by land from the mouth of the Canadian to that portion of the Choctaw Nation provided for the Chickasaws."

This plan the chiefs and headmen state was recommended to their delegation by William Armstrong, acting superintendent of the Western Territory, and the document, written in English, bears the certificate of J. M. Leih and Pitman Colbert; that it was interpreted to the chiefs and signed by them in the presence of Leih and Colbert.

A. H. M. Upshaw was appointed superintendent of the removal of the Chickasaws and was assisted by various conductors or aids. After the above-mentioned memorial had been signed and before July 4, 1837, the chiefs who recommended conveyance by water refused to go by water. But in September, 1837, the chiefs in council at Pontotoc were asked particularly by the superintendent (Upshaw) whether they wished to go by water; that if they did he had but a short time to have the boats ready; the next day they informed him that they wished to go by water. Thereupon the boats were procured by Phillips under Upshaw's direction, pursuant to the following contract, and in consequence of the delay of the Indians some of their boats remained at Memphis one month on expenses. Pursuant to the request above recited, said Phillips, who was a captain in the United States Army and a disbursing officer of the Chickasaw removal, on the first day of October, 1837, entered into the following agreement with Simeon Buckner.

Articles of agreement made on the 1st day of October, 1837, between Capt. J. A Phillips, U. S. Army, of the one part, and Simeon Buckner, of Louisville, Kentucky of the other part.

This agreement witnesseth that the said Capt. James A. Phillips, U. S. Army, for and on behalf of the United States of America, and the said Simeon Buckner, for his heirs, executors, and administrators, have mutually agreed, and by these presents do mutually covenant and agree, to and with each other, in manner following, to wit:

1st. That the said party of the second part agrees to transport, in good and substantial steamboats, with keels attached, if required, from Memphis, Tennessee, to Little Rock or Fort Coffee, as many of the Chickasaw Indians, their baggage and their agents, as may be designated by the superintendent of the emigration, on the following terms, to wit: For the transportation of said Indians to Fort Coffee, Arkansas, at the rate of $14.50 per head; for the transportation of said Indians to Little Rock, at the rate of $9 per head; for the freight on all Indian baggage, at the rate of $2 to Little Rock and $2.50 to Fort Coffee for every hundred-weight.

The conductors of parties on board are to have the entire control of the Indians and of the steam-boats, so far as regards the time of stopping and starting of said boats, and the safety and comfort of the Indians; but, in the management of the boats and the crew, the master alone is to control.

And the party of the first part agrees, for and on behalf of the United States, to allow to the party of the second part, for such of the steam-boats as may be employed in the emigration, and awaiting the arrival of the Indians at Memphis, $100 a day for each of the boats, as demurrage; and for the transportation of said Indians and their baggage, the rates as above stipulated.

The conductors of parties will give certificates of the number of Indians and the amount of freight transported; on which payment will be made if the agent is in funds, and of such funds as he may receive for the purpose.

That the United States will be responsible for no accidents arising under, or growing out of, the foregoing stipulations.

In witness whereof the parties have hereunto placed their hands and seals the day and date above written.

J. A. PHILLIPS,
Captain, U. S. A., Disbursing Officer.
SIMEON BUCKNER.

Witness:
BENJAMIN REYNOLDS.

October 20, 1837, Phillips wrote to Buckner from Pontotoc as follows:

"You will be allowed for the transportation of the Chickasaw Indians, per head, to Fort Coffee, $14.50, from Memphis; $9 to Little Rock, and $8 to Rock Rowe; and you will be allowed for each of the four steam-boats in the Indian removal, $100 for each day they have been or may be detained while awaiting the arrival of the Indians at Memphis."

This letter was approved by Upshaw, the superintendent of removal.

The parties to the contract contemplated the use of four boats, but six boats were employed at different times during the removal in consequence of the arrival of the Indians at Memphis in larger bodies than was contemplated when the contract was made. The average capacity of these boats was about 230 passengers.

Prior to July, 1840, the Government disbursing officers, Collins and Phillips, paid Buckner for transportation the sum of $39,652; later Buckner complained that 5,338 Indians had been designated for removal; that he had been ready to remove them; that through no fault of his, but by failure of the Indians to report, he was damaged, whereupon the following letters were written and Buckner was paid $37,749. This payment was opposed by the Commissioner of Indian Affairs.

TREASURY DEPARTMENT,
Second Comptroller's Office, July 1, 1840.

In regard to the legal title of Captain Buckner, under the contract, of which the annexed is a copy, it is my opinion that if the superintendents of the emigration designated the whole tribe of Chickasaw Indians, or any certain portion of the tribe, to be removed by water, by Captain Buckner, and if, by direction of the superintendent, Captain Buckner provided the means of transportation, agreeably to his contract, for the whole number so designated, but was prevented from effecting such transportation, not by any laches of his own, but by the failure on the part of the United States to induce or compel the Indians to be transported in the way provided them, then *in such case, Captain Buckner would be entitled to remuneration for the loss by him sustained for the non-compliance with the contract on the part of the United States;* and if the expense of transporting the whole number designated would not have been greater than the expense necessarily incurred, under the direction of the superintendent, in transporting the number actually transported by Captain Buckner, then and in such case the contract price would be the legal measure of damages.

ALBION K. PARRIS,
Comptroller.

TREASURY DEPARTMENT,
Second Auditor's Office, July 2, 1840.

I certify that *there is due from the United States to Simeon Buckner*, contractor, the sum of $37,749, being the balance of his account *for the transportation of* 5,338 *Chickasaw Indians from Memphis, Tennessee, to Fort Coffee, Arkansas*, per contract 1 October, 1837, as appears from the statement and vouchers herewith transmitted for the decision of the Second Comptroller of the Treasury thereon.

WM. B. LEWIS,
Second Auditor.

Rec. 304.

The evidence upon which the Treasury Department took this action is not before us. The total number of Indians carried by Buckner is uncertain, but was not much over 3,000; it does not appear that Upshaw or Phillips formally designated to him the number to be transported, but correspondence which took place at the time tends to show that the parties expected that about 4,000 Indians would emigrate, while the proof shows that in fact not even 3,000 emigrated by water all the way from Memphis to Fort Coffee, a large proportion going the entire distance by land, and others at least as far as Little Rock by land, whence they were taken by water. The Indians, on the other hand, carried a supply of stock and wagons, and an amount of baggage much in excess of what had been expected. Assuming that Buckner had the right to anticipate being called upon to transport 4,000 Indians and their baggage, and that by the terms of the contract he was under obligation to have ready boats sufficient for this purpose for the through trip, Memphis to Fort Coffee, he would have been entitled to receive $61,000, to wit:

Passage money for 4,000 Indians, at $14.50 each	$58,000
Add the regulation amount, viz, 30 pounds baggage to each Indian, 120,000 pounds, at $2.50 per 100 pounds	3,000
Total	61,000

The baggage, stock, and wagons were far in excess of the amount anticipated, and the irregularity in arrival at Memphis of the Indians occasioned delay and loss to the contractor, but to what extent is not shown by the proof. The delay, however, is covered by another item for $14,672.50 paid Buckner as demurrage, and a large number of Indians were carried to Fort Coffee from Little Rock and not from Memphis.

The following payments were made to Simeon Buckner on account of transportation of Indians:

1838. Jan. 17.	Transportation of 1,459 Chickasaws, at $14.50 each ($21,155.50), and 400 tons baggage, at $50 per ton ($20,000), Memphis to Fort Coffee	$41,155.50
Mar. 9.	Transportation of 447 Chickasaws, at $7 each ($3,129), and 186 tons baggage, at $2 per 100 pounds ($7,440), Little Rock to Fort Coffee	10,569.00
Mar. 9.	Transportation of 900 Indians, at $14.50 each ($13,050), and 455 tons baggage, at $2.50 per 100 pounds ($23,550), Little Rock to Fort Coffee	36,600.00
Aug. 31.	Transportation of 20 Chickasaws, at $7 each ($140), and 1,500 pounds baggage, at $2 per 100 pounds ($30), from Little Rock to Fort Coffee	170.00
Dec. 16.	Transportation of 120 Chickasaws, at $14.50 each, and 140,000 pounds of baggage, at $2.50 per 100 pounds, from Memphis to Fort Coffee; and 48 Indians from Little Rock to Fort Coffee, at $7 each, and demurrage two days at Little Rock (transportation, $2,177.50; baggage, $3,500; demurrage, $200)	5,877.50
1837. Nov. 11.	Demurrage	500.00
Mar. 9.	Demurrage	14,172.50
1840. July 2.	Transportation of 5,338 Chickasaws from Memphis to Fort Coffee, at $14.50 each ($77,401), less amount already paid by Capts. R. D. Collins and J. A. Phillips, viz, $39,652	37,749.00
1837. Dec. —.	Freight on corn	1,600.00
	Total amount paid Buckner	148,393.50

VII.

The nation was charged with between five and six million rations, furnished under treaty provisions. As nearly as may be ascertained from the general account furnished, these rations were made up as follows:

Full rations	2,581,604
Rations of beef, corn, and salt	1,649,752
Rations of salt	34,085
Rations of corn	1,524,417

The general charge was excepted to by Colbert, the Chickasaw representative, upon the ground that the greatest number of emigrating Indians, including slaves, did not reach 8,000, of whom 500 commuted rations for money, leaving 7,500 Indians and slaves. The number of Indians in the Chickasaw tribe in the year 1837, and the number of those who emigrated, is very uncertain; Colbert said 7,500; the emigration rolls show 6,079, of whom about 4,058 were adults, and of children under ten years of age there were approximately 2,013. The reservation rolls show the tribe as made up of not far from 7,000 all told. The Boggy Dépôt roll, made up in August, September, and October, 1839, in the Indian Territory, shows over 8,000 Chickasaws as having then emigrated; there is, however, every reason to believe that of this number something in the neighborhood of 1,000 were erroneously entered on the roll. The Commissioner of Indian Affairs reported (1844) the total number of Chickasaws at 9,000, of whom 5,990 had already emigrated. The following report, that of 1845, shows 4,090 as having emigrated and 4,211 as still living east of the Mississippi. Neither of these reports includes slaves. Superintendent Armstrong's report for 1843 shows something over 5,000 Chickasaws in the Indian Territory. Upshaw, reporting on the census of 1844, places the number at 4,111, while other contemporaneous reports, not necessary now to refer to in detail, place the total emigration at not far from 6,000. It was impossible at the time, it is doubly impossible now, to tell with accuracy the population of the tribe or the number of emigrants. Remembering the way in which they emigrated, that many parties

We refrain, however, from expressing any opinion on this subject, as the question must necessarily be taken to the legislative department of the Government, which alone has power to grant relief, which will consider the equities of the case, and which will decide whether it is one wherein the doctrine should be waived that, as the sovereign does no wrong and is ever ready and willing to pay just debts, the Government pays no interest.

The findings of fact and the opinion of the Court of Claims in the case have been adopted as the decision of the Department in the matter.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR, OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 17, 1887.

SIR: I have the honor to acknowledge the receipt of your communication of the 12th instant, returning the papers in the matter of the claim of the Chickasaw Nation *vs.* the United States, under the fourth article of the treaty of June 22, 1852 (10 Stats., 974-976), with advice that, after a careful consideration of the case, you have concluded to adopt as the decision of the Department in the matter the findings and opinion of the Court of Claims thereon, as set forth in the certified copy of opinion filed April 25, 1887.

In this communication this office is instructed to report the case to the Department, with such brief statement of the history relating thereto as may be necessary, to the end that it may be presented for the action of Congress.

In reply, I have to state that under treaties made with the Chickasaw Nation in 1832 and 1834, a large trust fund was created for their benefit from the net proceeds of sale of their lands lying east of the Mississippi River.

This fund was deposited in the United States Treasury prior to the year 1839, subject to reductions on account of certain charges for specific expenses authorized by said treaties. Prior to 1852, the Chickasaw Indians had complained that errors existed in the accounts of their trust funds kept at the Treasury Department, and that in consequence of such errors the balance had been represented as much less than its actual amount; therefore, the semi-annual payments of interest which they had received on their trust funds were less than they were entitled under the said treaties to receive, and they requested that the matter be corrected. The alleged errors of account were divided into two classes: 1st, those pertaining to charges for disbursements from the Chickasaw general fund and, 2d, those pertaining to the orphan and incompetent funds.

By treaty with the Chickasaw Nation, dated June 22, 1852, the fourth article was inserted to correct these alleged errors, as follows:

"ARTICLE 4. The Chickasaws allege that in the management and disbursement of their funds by the Government they have been subjected to losses and expenses which properly should be borne by the United States. With the view, therefore, of doing full justice in the premises, it is hereby agreed that there shall be, at as early a day as practicable, *an account stated*, under the direction of the Secretary of the Interior, exhibiting in detail all the moneys which from time to time have been placed in the Treasury to the credit of the Chickasaw Nation resulting from the treaties of 1832 and 1834 and all the disbursements made therefrom. And said account as stated shall be submitted to the Chickasaws who shall have the privilege, within a reasonable time, of filing exceptions thereto, and any exceptions so filed shall be referred to the Secretary of the Interior, who shall adjudicate the same according to the principles of law and equity, and his decision shall be final and conclusive on all concerned.

"It is also alleged by the Chickasaws that there are numerous cases in which moneys held in trust by the United States for the benefit of orphan and incompetent Chickasaws have been wrongfully paid out to persons having no right to receive the same. It is therefore further agreed that all such cases shall be investigated by the agent of the United States, under the direction of the Secretary of the Interior; and if it shall appear to the satisfaction of said Secretary that any of the orphans and incompetents have been defrauded by such wrongful payments, the amount thus misapplied shall be accounted for by the United States as if no such payment had been made: *Provided*, That the provisions of this article shall not be so construed as to

item connected with the emigration chargeable to the fund. Of this sum, to wit, $67,988.76, the sum of $14,672.50 was paid Buckner for demurrage, leaving a balance of $53.316.26. Objection has since been withdrawn to all of this but the sum of $26,563.68, made up of the following items:

1837.			
June	9.	E. P. McDowell & Co., camp equipage for officers	$80.00
	25.	J. M. Caldwell, assistant agent	150.50
	30.	J. D. Searight, traveling expenses	286.00
	30.	W. A. M. Brooke, for services as assistant agent, etc	392.00
	30.	Lieut. G. Morris, traveling expenses	275.00
	30.	C. Langtree, for services as assistant agent	252.00
July	5.	C. Vanderslice, as agent, etc	471.20
	5.	W. R. Guy, services as agent	328.75
	5.	F. G. Roche, services as agent	350.87
	6.	J. L. Mizell, agent, traveling expenses	239.13
	12.	Lieut. J. Van Horne, expenses	83.50
Aug.	1.	Lieut. G. Morris, traveling expenses	86.00
Sept.	18.	C. Langtree, assistant agent	342.88
	29.	Steamer Indian, passage of G. Morris and horse, etc	75.00
	30.	Traveling expenses of G. Morris, etc	167.50
	30.	J. M. Millard's pay as assistant agent, etc	956.13
	30.	G. P. Kingsbury, acting agent	355.89
	30.	W. R. Guy, services as enrolling agent	368.00
Nov.	4.	B. N. Hampton, services in collecting Indians	36.00
	9.	C. Langtree, services as agent	237.50
	11.	W. A. P. Jones, services as assistant	20.00
	12.	W. R. Guy, services as agent	124.00
	19.	D. Vanderslice, assistant agent	244.00
	20.	F. G. Roche, as enrolling agent	492.00
	23.	George Gray, conductor	230.00
Dec.	1.	C. Langtree, assistant agent	219.00
	9.	S. B. Cherry, assistant agent	32.00
	16.	E. M. Yard, assistant agent	653.64
	20.	W. B. Kimball, assistant agent	191.00
	20.	W. S. Henderson, assistant conductor	161.00
	21.	F. G. Roche, enrolling agent	493.87
	31.	S. Love, assistant	10.00
1838.			
Jan.	12.	W. A. M. Brooke, assistant agent	987.50
	13.	J. L. Mizell, expenses, etc.	149.37
	15.	S. B. Cherry, assistant agent, etc	513.00
	17.	J. Hensley, agent and conductor	259.00
	21.	C. Langtree, as conductor	403.67
	29.	W. J. Wilbern, assistant agent	479.10
Feb.	7.	J. M. Shelton, conductor	55.00
	8.	C. Johnson, assistant agent	339.00
	8.	W. R. Guy, enrolling agent, etc	581.62
	9.	G. Winders, assistant agent	1,008.86
	20.	A. Chase, clerk to Captain Collins	153.00
Mar.	8.	Steamer Little Rock, passage of Captain Collins	42.50
	17.	D. Vanderslice, assistant agent	162.00
	25.	R. B. Crockett, conductor	411.85
Apr.	17.	D. Vanderslice, expenses	556.42
	24.	Lieut. G. Morris, expenses at Little Rock and in settling his account	265.94
July	6.	G. P. Kingsbury, expenses	159.63
Aug.	11.	W. B. Kimball, expenses	81.00
Sept.	20.	J. M. Millard, assistant superintendent	1,367.13
	20.	D. Vanderslice, assistant superintendent, extra pay	1,398.00
	21.	Capt. J. A. Phillips, expenses	2,259.00
1838.			
Sept.	30.	G. P. Kingsbury, assistant agent	1,200.00
Nov.	4.	E. F. Neal, clerk to Captain Collins	68.00
	30.	L. Chase, clerk to Captain Collins	200.00
1839.			
Jan.	26.	C. Langtree, horse hire	92.00
	28.	J. Walker, horse hire	111.00
	28.	D. Vanderslice, horse hire	361.00

1839.			
Jan.	28.	D. Vanderslice, assistant superintendent and horse hire, etc	$820.80
Feb.	2.	W. A. M. Brooke, assistant superintendent	2,119.93
Mar.	6.	G. P. Kingsbury, assistant agent	500.00
June	30.	J. K. Taylor, services as clerk to Captain Collins	724.00
1840.			
Sept.	7.	J. M. Millard, horse hire	330.00
			26,563.68

These payments were in fact made for services actually rendered, and they seem to have been for expenses and services necessarily incurred in the removal.

X.

The Chickasaw Nation is charged on the books of the United States with the sum of $198,560.82, paid out of the proceeds of sales of the reservations of Chickasaws incompetent to manage their own affairs. These payments were made upon twenty-nine certificates, all signed by Ishtohotopa, the king, and Isaac Albertson, by their marks. In addition the several certificates bore the following signatures: Seven were signed by James Colbert, Slone Love, and James Wolf; three were signed by Slone Love and James Colbert; twelve were signed by Slone Love and James Wolf; four were signed by James Colbert and Benjamin Love; and two were signed by Slone Love and Benjamin Love, the last certificate being unaccounted for. Slone Love was not a chief; the others were chiefs or headmen. The chiefs in council were composed of the king, chiefs, and headmen. Sometimes as many as fifty were in council. There was no smaller or executive council at the time of the transactions in question.

The names attached to the treaty of Pontotoc are those of the Indians composing the council at that time.

Indian traders purchased the claims of the different Indians called incompetent, and received powers of attorneys to collect the moneys. In return they gave due bills, some of which the Indians lost or destroyed, while the others were redeemed by the traders in ponies, calicoes, or other goods, furnished at extravagant prices. Many of the certificates purporting to be signed by the king were in fact signed with the king's name by Albertson, who alleged that he was authorized so to do. The king afterwards, about 1843, when complaint had been made on the subject, denied having given such authority. Albertson was one of the persons named in the fourth article of the treaty of 1834. None of the certificates and no recommendations were given by the chiefs in council. The Indians did not receive the full value of their claims, but were imposed upon; nor did their assignees receive full value, as payment was made by the Government in State stock, in which the fund was invested, and which was worth much less than par. The certificates were all substantially in the form set forth below, and the certificate of the agent was affixed without careful inquiry into the facts peculiar to each individual's case. It is not shown that these facts were known in Washington at the time, or that complaint was then made by the Indians. It does appear that the latter received some value for the certificates. But less than one-half of $198,560.82 was received by the said incompetents.

The body of the commissioners' certificates hereinafter set forth contains in no case names in the handwriting of the Indians, but each certificate, except the signatures at the end above the agent's certificates and except his certificate, appears to be in the same handwriting, including the names of the several Indians.

Incompetents No. 1.

We, the undersigned, Choctaw Indians, whose names and roll numbers are hereunto annexed, To-nubby, No. 266; Fo-li-chah, No. 570; Chish-wah, No. 204; Ha-la, No. 884; Shu-ma-chah-chah, No. 746; I-yun-ta-tubby, No. 756; Cun-ne-ta, No. 763; Po-cha, No. 407; Lap-pim-mi-ubby, No. 226; I-yoch-ha-ta, No. 488; Arch. McGee, No. 712, O-wil-lah-na-ha, No. 162; O-nah-chubby, No. 210; Kil-lah-chah, No. 999; Tush-pah-tubby, No. 239; Im-mi-ha-tubby, No. 645; Ish-tim-mul-lah-kah, No. 530; O-nah-hubby, No. 345, who were declared incompetent by the Chickasaw chiefs or commissioners, under the fourth article of the treaty of 1834 between the United States and said Chickasaw tribe of Indians, do hereby acknowledge to have received of Daniel Saffarrans and Felix Lewis the amount of the annexed note, and do further relinquish to the said Daniel Saffarrans and Felix Lewis so much of the invested stock and interest accruing thereon invested for my benefit, as an incompetent Chickasaw,

under the above-mentioned article of said treaty, as will satisfy the debt of said Daniel Saffarrans and Felix Lewis, amounting to $17,362.15:

Roll No.	Names.	Amount.	Roll No.	Names.	Amount.
266	To-nubby	$494.94	712	Arch. McGee	$953.28
570	To-le-chah	200.13	162	O-willah-nah-ha	461.50
264	Chish-wa	1,002.00	210	O-nah-chubby	500.00
746	Shu-ma-chah-chah	972.74	999	Kil-lah-chah	1,180.30
756	Iyun-ta-tubby	1,300.00	239	Tush-pah-tubby	421.79
884	Halah	1,000.00	645	Im-mi-ha-tubby	1,200.00
763	Cun-ni-tah	401.25	530	Ish-tim-mul-lah-kah	755.44
813	If-bah-no-wah-tubby	1,556.15	345	O-nah-hubby	985.00
407	Po-cha	956.00			
226	Lap-pim-mi-nubby	2,166.50		Total amount	17,362.15
488	Iyoch-ha-ta	854.31			

And we do further request the chiefs or commissioners of the Chickasaw tribe of Indians to give their assent and recommend the transfer of said stock and interest thereon to said Daniel Saffarrans and Felix Lewis.

We, the undersigned, chiefs or commissioners of the Chickasaw tribe of Indians, having examined the annexed notes, amounting to $17,362.15, and the same being duly acknowledged, do respectfully recommend that the same be paid from the investment of State stocks and interest made under the 4th article of the treaty of 1834 by the United States for said claimants. The said Daniel Saffarrans and Felix Lewis agreeing to take said stock, with the interest thereon, at par.

ISH-TA-HO-TA-PA (his x mark).
JAMES COLBERT.
SLONE LOVE.
ISAAC ALBERSON (his x mark).
JAMES WOLF.

I certify that the annexed notes were examined and the above instrument signed by the Chickasaw chiefs or commissioners in my presence, and that the same is correct to the best of my knowledge and information.

A. M. M. UPSHAW, *C. A.*

BOGGY DEPOT, *August*, 1841.

Incompetents No. 1.

No. 264.

$1,002.

One day after date I promise to pay Dan'l Saffarrans and Felix Lewis, or order, $1,002, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

CHISH-WA (his x mark).

BOGGY DEPOT, *June* 30, 1841.

Witness:
CHAS. JOHNSON, *Inter.*
WM. BARNETT.

No. 756.

$1,300.

One day after date I promise to pay Dan'l Saffarrans and Felix Lewis, or order, $1,300, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

I-YUN-TA-TUBBY (his x mark).

BOGGY DEPOT, *July* 23, 1841.

Witness:
CHAS. JOHNSON, *Inter.*
WM. BARNETT.

No. 884.

$1,000.

One day after date I promise to pay Dan'l Saffarrans and Felix Lewis, or order, $1,000, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

HA-LAH (his x mark).

BOGGY DEPOT, *June* 29, 1841.

Witness:
CHAS. JOHNSON, *Inter.*
WM. BARNETT.

No. 813.

$1,556.15.

One day after date I promise to pay Dan'l Saffarrans and Felix Lewis, or order, $1,556.15, and the interest thereon, it being the amount of my deposit in the hands of the General Government, for value received.

IB-BAH-NO-WAH-TUBBY (his x mark).

BOGGY DEPOT, *June* 4, 1841.

Witness:
CHAS. JOHNSON, *Inter.*
WM. BARNETT.

No. 226.

$2,166.50.

One day after date I promise to pay Dan'l Saffarrans and Felix Lewis, or order, $2,166.50, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

LAP-PIM-MI-UBBY (his x mark)

BOGGY DEPOT, *June* 4, 1841.

Witness:
CHAS. JOHNSON, *Inter.*
WM. BARNETT.

Incompetents No. 11.

We, the undersigned, Chickasaw Indians, whose names and roll numbers are unto annexed, Fal-ha-cha, No. 913; We-yum-na-cha, No. 567; Nock-ho-mo-chubby, No. 73; I-yah-kin-tubby, No. 132; Low-ish-tubby, No. 582; Ne-kah-ta-cha, No. 454; Shewah, No. 504; Ish-te-ho-yo-ka, No. 166; Hul-lut-le-tubby, No. 87; Oke-loo-hash-tubby, No 755; In-con-chubby, No. 141; Ho-ta-cha, No. 452; I-yuke-pah-che-tubby, No. 191, who were declared incompetent by the Chickasaw chiefs or commissioners, under the fourth article of the treaty of 1834 between the United States and said Chickasaw tribe of Indians, do hereby acknowledge to have received of Daniel Saffarrans and Felix Lewis the amount of the annexed note.

Roll No.	Names.	Amount.	Roll No.	Names.	Amount.
913	Fal-ha-cha	$2,000.00	166	Ish-te-ho-yo-ka	$256.00
567	We-yum-na-cha paid	1,000.00	87	Hul-lut-le-tubby	200.00
73	Nock-ho-mo-chubby	633.44	755	Oke-loo-hash-tubby	100.00
132	I-yah-kin-tubby	500.04	141	In-con-chubby	75.22
582	Low-ish-tubby	439.86	452	Ho-ta-cha	800.00
454	Ne-kah-ta-cha paid	400.00	191	I-yuk-pah-che-tubby	608.34
504	She-tah paid	400.00			
					7,412.86

And do further relinquish to the said Daniel Saffarrans and Felix Lewis so much of the invested stock, and interest accruing thereon invested for my benefit, as an incompetent Chickasaw, under the above-mentioned article of said treaty, as will satisfy the debt of said Daniel Saffarrans and Felix Lewis, amounting to $7,412.86. And we do furthermore request the chiefs or commissioners of the Chickasaw tribe of Indians to give their assent and recommend the transfer of said stock and interest thereon to said Daniel Saffarrans and Felix Lewis.

We, the undersigned, chiefs or commissioners of the Chickasaw tribe of Indians, having examined the annexed notes, amounting to $7,412.86, and the same having been duly acknowledged, do respectfully recommend that the same be paid from the investment of State stocks and interest made under the fourth article of the treaty of 1834 by the United States for said claimants. The said Daniel Saffarrans and Felix Lewis agreeing to take said stock, with the interest thereon, at par.

ISH-TE-HO-TO-PA (his x mark).
ISAAC ALBERTSON (his x mark).
JAMES WOLF.
SLONE LOVE.

DECEMBER 2, 1841.

I, A. M. M. Upshaw, Chickasaw agent, certify that the annexed notes were examined and the above instrument signed by the Chickasaw chiefs or commissioners in my presence, and that the same is correct to the best of my knowledge and information.

A. M. M. UPSHAW,
Chickasaw Agent.

Incompetents No. 11.

No. 913.

One day after date I promise to pay Saffarrans and Lewis, or order, $2,000, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

FAL-HA-CHA (his x mark).

OCTOBER 4, 1841.

Witness:
WM. BARNETT.

No. 73.

$633.44.

One day after date I promise to pay Saffarrans and Lewis the sum of $633.44, the same being the amount of my deposit in the hands of the General Government, for value received.

NOCK-HO-MO-CHUBBY (his x mark).

BOGGY DEPOT, *October* 7, 1841.

Witness:
CHAS. JOHNSON.

No. 132.

$500.

One day after date I promise to pay Saffarrans and Lewis the sum of $500, for value received, the same being the amount of my deposit in the hands of the General Government.

I-YAH-KIN-TUBBY (his x mark).
By his widow, AH-HO-NAH (her x mark).

BOGGY DEPOT, *October* 30, 1841.

Witness:
CHAS. JOHNSON.

No. 582.

$439.86.

One day after date I promise to pay Saffarrans and Lewis, or order, $439.86, and the interest on the same, it being the amount of my deposit in the hands of the General Government, for value received.

LOW-ISH-TUBBY (his x mark).

SEPTEMBER 17, 1841.

Witness:
THOS. HAWKIN.

No. 166.

$256.

One day after date I promise to pay Saffarrans and Lewis the sum of $256, for value received.

ISH-TO-HO-YO-KA (his x mark).

BOGGY DEPOT, *October* 12, 1841.

Witness:
CHAS. JOHNSON.

Incompetents No. 15.

We, the undersigned Chickasaw Indians, whose names and roll numbers are hereunto annexed, No. 279, Sha-un-key; No. 460, In-to-nubby; No. 54, Tah-no-tubby; No. 131, Sta-lut-ka; No. 370, Ish-tim-mul-la; No. 177, Im-me-a-che-tubby; No. 87, Hal-lut-le-tubby; No. 755, Oke-loo-harsh-tubby; No. 93, Shi-ho-chi-ka; No. 51, Ish-ta-ko-yah; No. 1020, Lut-to-key; No. 1092, Mush-shu-la-cubby; No. 425, Isk-ar-key; No. 965, Pi-ha-che; No. 36, Un-ta-ka-she; No. 418, Thlif-fo-ni-yea; No. 642, Tow-wim-mah; No. 974, Tom-ho-cha; No. 526, Noos-tuck-chubby; No. 815, In-took-loo-tubby; No. 29, Te-wa-ha; No. 1069, Oke-lah-umby; No. 624, I-yock-a-hun-tubby; No. 433, Cun-na-mah-tubby; No. 89, Wy-o-la; No. 368, Tun-nup-ha-cubby; No. 546, E-nock-sho-po-tubby; No. 476, Ish-pah-hah-tubby; No. 521, Ib-bah-no-yah; No. 114, Im-ma-thlish-tubby; No. 897, Im-pah-tubby, who were declared incompetent by the Chickasaw chiefs or commissioners, under the fourth article of the treaty of 1834 between the United States and said Chickasaw tribe of Indians, do hereby acknowledge to have received of Daniel Saffarrans and Felix Lewis the amount of the annexed note, and do further relinquish to the said Daniel Saffarrans and Felix Lewis so much of the invested stock and interest accruing thereon invested for our benefit, as incom-

petent Chickasaws, under the above-mentioned article of said treaty, as will satisfy the debt of said Daniel Saffarrans and Felix Lewis, amounting to $19,023.61.

Roll No.	Names.	Amount.	Roll No.	Names.	Amount.
279	Sha-un-key	$659.13	974	Tom-ho-cha	$1,168.60
460	Un-to-nubby	332.18	526	Noos-tuck-chubby	882.00
54	Tah-no-tubby	1,461.87	815	In-took-loo-tubby	1,038.45
131	Sta-lot-ka	660.00	29	Te-wa-ha	160.19
370	Ish-tim-mul-lah	400.00	1069	Oke-lah-umby	634.00
177	Im-me-ak-che-tubby	372.00	624	I-yock-a-hun-tubby	736.07
87	Hul-lut-le-tubby	836.44	433	Cun-na-mah-tubby	121.90
755	Oke-loo-harsh-tubby	846.69	89	Wy-o-la	296.20
93	She-ho-chi-ka	425.95	368	Tum-nup-ha-cubby	440.00
51	Ish-ta-ka-yah	300.54	546	E-nock-sho-pah-tubby	42.87
1020	Lut-to-key	14.00	476	Ish-pah-hah-tubby	872.92
1092	Mash-shu-la-cubby	423.33	521	Ib-bah-mo-yah	1,206.03
425	Ish-ar-key	412.40	114	Im-mah-thlish-tubby	435.50
965	Pi-ah-chi	784.73	897	Im-pah-tubby	63.25
36	Ud-tah-ka-sha	775.38			
418	Thlif-fo-ni-yea	942.03		Total amount	19,023.61
642	Tow-wim-mah	1,278.86			

And we do furthermore request the chiefs or commissioners of the Chickasaw tribe of Indians to give their assent and recommend the transfer of said stock and interest thereon to said Daniel Saffarrans and Felix Lewis.

We, the undersigned, chiefs or commissioners of the Chickasaw tribe of Indians, having examined the annexed notes, amounting to $19,023.61, and the same having been duly acknowledged, do respectfully recommend that the same be paid from the investment of State stocks and interest made under the fourth article of the treaty of 1834 by the United States for said claimants. The said Daniel Saffarrans and Felix Lewis agreeing to take said stock, with the interest thereon, at par.

ISH-TE-HO-TO-PA, KING (his x mark).
ISAAC ALBERSON (his x mark).
JAMES WOLF.
SLONE LOVE.

I certify that the annexed notes were examined and the above instrument signed by the Chickasaw chiefs or commissioners in my presence, and that the same is correct, to the best of my knowledge and information.

A. M. M. UPSHAW,
Chickasaw Agent.

Incompetents No. 15.

No. 54.

$1,461.87.

One day after date I promise to pay Saffarrans and Lewis, or order, $1,461.87, for value received.

TAH-NO-TUBBY (his x mark).

BOGGY DEPOT, *January* 3, 1842.

Witness:
JAMES WOLF.

No. 642.

$1,278.86.

One day after date I promise to pay Saffarrans and Lewis, or order, $1,278.86, for value received.

TOW-WIM-MAH (his x mark).

BOGGY DEPOT, *January* 7, 1842.

Witness:
WILLIAM BARNETT,
Interpreter.

No. 974.

$1,168.60.

One day after date I promise to pay Saffarrans and Lewis, or order, $1,168.60, for value received.

TOM-HO-CHA (his x mark).

BOGGY DEPOT, *January* 6, 1842.

Witness:
CYRUS HARRIS.

No. 815.

$1,038.45.

One day after date I promise to pay Saffarrans and Lewis, or order, $1,038.45, for value received.

IN-TOOK-LOO-TUBBY (his x mark).

BOGGY DEPOT, *January* 7, 1842.

Witness.
WILEY DICKINSON.

No. 521.

$1,206.03.

One day after date I promise to pay Saffarrans and Lewis, or order, $1,206.03, for value received.

IB-BAH-NO-YAH (his x mark).

BOGGY DEPOT, *January* 8, 1842.

Witness:
JAMES WOLF.

Incompetents No. 17.

Daniel Saffarrans' certificate of claims against incompetent Chickasaws.

Rept. No.	Names.	Amount.	Total.
33	Tin-nah-key	$4.68	$54.00
810	Til-lo-wah	.60	6.50
892	Ho-nu-chah	16.64	104.00
814	Fat-ho-cha	51.00	150.00
591	Elias	16.88	102.00
		83.80	416.50

We, the undersigned, commissioners of the Chickasaws, certify the foregoing accounts, amounting to $500.30, were acknowledged by Tin-nah-key, Til-lo-wah, Ho-nu-chah, Fat-ho-chef Elias, to be just and owing Daniel Saffarrans. We therefore recommend a transfer of so much of the stock invested by the Government of the United States for the benefit of the said incompetent Chickasaws as will discharge the above amounts, according to the decision of the honorable Secretary of War, dated June the 30th, 184 .

ISH-TO-HO-TO-PAH (his x mark).
ISAAC ALBERSON (his x mark).
JAMES COLBERT.
BENJ. LOVE.

I certify that the foregoing accounts were examined and acknowledged in my presence, and that the same were satisfactory proven to be just and owing.

A. M. M. UPSHAW, *C. A.*

Incompetents No. 17.

$54.

One day after date I promise to pay Daniel Saffarrans $54, for value received, with interest at 8 per cent. per annum until paid.

TIN-NAH-KY (her x mark).

BOGGY DEPOT, *November* 28, 1839.

Witness:
A. P. SHELDON.

Interest to 1st January, 1841, $4.68.

No. 810.

$6.50.

One day after date I promise to pay Daniel Saffarrans or order $6.50, for value received, with interest at 8 per cent. per annum until paid.

TIL-LO-WAH (his x mark).

BOGGY DEPOT, *November* 6, 1839.

Witness:
A. P. SHELDON.

Interest, 60 cents.

$104.

One day after date I promise to pay to Ho-to-ka $104, for value received January 7, 1839.

HO-YOU-MISH-CHAR (his x mark.)

ISAAC JEFFERSON.

Interest to 1st January, 1841, $16.64.

One day after date I promise to pay John W. Owden the sum of $150, for value received of him this September 16, 1836.

LAR-TE-CHA (his x mark). [SEAL.]

Witness:

JAMES WOLF.

Interest to 1st January, 1841, $51.

(Indorsed:) I assign the within to Daniel Saffarrans, for value received.

JOHN W. ODEN.

XI.

The Chickasaws are charged on the books of the United States with the sum of $161,619.10, paid out of the proceeds of the sale of lands of Chickasaw orphans upon certificates similar in form to the following, with agent's certificate as annexed.

The payments were in most, if not in all, cases made directly to Indian traders, who held powers of attorney similar in form to the following, with the agent's certificate as annexed:

ORPHANS No. 1.

Statement showing the disposition of the proceeds of the land set apart for the Indians designated under 8th Article, Chickasaw treaty of 1834; powers of attorney to receive the same presented by Daniel Saffarrans, esq.

	Reservees' names.	Sales proceeds first investment.	Sales proceeds second investment.	Sales proceeds third investment.	Sales proceeds fourth investment.	In Treasury United States not invested.	
9	Im-me-ah-ho-ka	$1,905.18					
14	Viney, by heir	797.05	.....	.....	$480.99		
46	Ah-no-ah-ho-ka	867.29	.....	.....	480.90		
50	Kul-kah	806.55					
103	Che-ka-ta	1,600.00					
114	Un-tock-ah-ne-ubby	1,693.92					
116	On-tim-ah-ho-ka	880.00	.....	$480.00			
121	Maria Love	1,862.73					
134	Cyrus Harris	1,604.20					
149	Co-pah-kah-ish-tubby	1,603.20					
150	Shin-ah-to-key	801.25					
151	Im-monke-loon-tub-tubby	1,904.61					
153	Ah-ha-kin-tubby	1,597.20					
193	Colon-o-tubby	799.60	.....	479.76			
22	Ish-tim-mut-la-cha, by heir	.....	$479.40	479.40			
47	Alexander	.....	480.42	.....	480.92		
42	Bah-pah-sah	.....	.....	960.24			
77	Mah-cha-ma-cha	.....	.....	478.20			
122	Chim-e-sha	.....	.....	480.66			
163	Seley Cooper	.....	.....	502.35			
45	Ut-ho-ya-sha	.....	.....	.....	480.72		
185	Johnson	.....	.....	.....	.....	$479.70	
		18,722.78	959.82	3,860.61	1,923.53	479.70	=$25,946.44
	Interest on sales from date of investment to 1 Jan y '42, at 5 per cent	4,198.51	191.96	541.01	225.28	.....	5,156.76
							31,103.20

Stock for investments	$25,466.74
Interest	5,156.76
Requisition for amount in Treasury	479.70
	31,103.20

Received, Washington, April 30, 1842, from the Secretary of War, the following stocks and money on account of claims above designated:

Twenty-five certificates of Arkansas State stocks, of $1,000 each, dated January 1, 1837, No. 14 to 38, both inclusive	$25,000.00
Requisition on Treasury United States for	479.70
One United States bond for $2,000, with interest at 6 per cent. from January 1, 1842, to April 30, same year	2,040.00
One United States bond for $2,000, with interest at 6 per cent. from December 4, 1841, to April 30	2,049.00
D. Kurtz, check on cashier Bank America, New York, for	1,534.50
	31,103.20

SAFFARRANS & LEWIS.

$102.

One day after date I promise to pay Hoy-ea $102, for value received of her this the 2d day of September, 1839.

ELIAS (his x mark).

Witness:
WILLIAM BARNETT.

Interest to January 1, 1841, $10.88.

No. 9.

Whereas, under and by virtue of the 8th article of a treaty made and concluded at Washington on the 24th day of March, A. D. 1834, between the United States and the Chickasaw Nation of Indians, the south half of section 32, in township 2, and range 2 west, in the Chickasaw Cession and State of Mississippi, was located for Im-mi-ah-ho-ka, a Chickasaw orphan, Roll No. 9; and whereas by virtue of said 8th article of said treaty, and in pursuance thereof, the said location has been sold for the benefit of the said Im-mi-ah-ho-ka, and by and under the authority of the said United States;

Now be it known to all men that I, Im mi-ah-ho-ka, a Chickasaw orphan, enrolled and located as such, have made, constituted, and appointed, and by these presents do make, constitute, and appoint, Dan'l Saffarrans and Felix Lewis my true and lawful agents and attorneys in fact for me and in my name, place, and stead to ask, demand, and receive of and from the proper officers of the United States all such sum or sums of money as may be due and owing to me on account of the sale of my said reservation under the treaty aforesaid, hereby authorizing my said attorneys, for me and in my name, to give such full and ample receipts and acquittances as may be necessary for all such sum or sums of money as may be found due to me, or may be paid over to them on my account, in consequence of the sale or sales aforesaid.

In testimony whereof, I, the said Im-mi-ah-ho-ka, have hereunto set my hand and seal this 21st day of October, A. D. 1841.

IM-MI-AH-HO-KA (her x mark).

Signed, sealed, and acknowledged in our presence.
CHAS. JOHNSON.
A. P. SHELDON.

I certify that the above-named Im-mi-ah-ho-ka is the identical person who is entitled to the proceeds of No. 9 on the Chickasaw orphan roll, under the treaty of the 24th May, 1834, and that she has and did assign to Saffarrans & Lewis by power of attorney her respective interest understandingly, and that she acknowledged to have been paid a full consideration, and is therewith satisfied.

A. M. M. UPSHAW, *C. A.*

MARCH 29, 1842.

CHOCTAW NATION WEST.

We, the undersigned, commissioners recognized and appointed by the treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, do hereby certify that the south half of section 32, in township 2, of the second range west, in the Chickasaw Cession and State of Mississippi, was reserved for Im-mi-ah-ho-ka, a Chickasaw orphan, Roll No. 9, and that said location has been sold by the United States for the benefit of said Im-mi-ah-ho-ka; that said Im-mi-ah-ho-ka is well-known to us, and has married, and is fully capable of managing her own affairs, and, in our opinion, it would be to the interest and advantage of said Im-mi-ah-ho-ka for the money arising from said sale to be paid to her by the United States in pursuance of the provisions of said treaty.

Given under our hands and seals this 21st day of October, A. D. 1841.

ISH-TE-HO-TO-PA (his x mark). [SEAL.]
ISAAC ALBERSON (his x mark). [SEAL.]
JAMES WOLF. [SEAL.]
SLONE LOVE. [SEAL.]

CHOCTAW NATION WEST.

I, A. M. M. Upshaw, Chickasaw agent, do hereby certify that the foregoing instrument was signed by the commissioners whose names appear thereto, and that to the best of my knowledge, information, and belief their statement is correct and accurate, and I unite with them in their recommendation.

Given under my hand this 21st day of October, A. D. 1841.

A. M. M. UPSHAW, *C. A.*

No. 14.

Whereas, under and by virtue of the eighth article of a treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, the west half of section 32, in township 4 and range 3 west, in the Chickasaw Cession and State of Mississippi, was located for Viney, a Chickasaw orphan, Roll No. 14; and whereas, by virtue of the said eighth article of said treaty, and in pursuance thereof, the land so reserved has been sold for the benefit of the said Viney, by and under the authority of the said United States;

Now, be it known to all men that I, Viney, a Chickasaw orphan, enrolled and located as such, have made, constituted, and appointed, and by these presents do make, constitute, and appoint, Dan'l Saffarrans and Felix Lewis my true and lawful agents and attorneys in fact for me and in my name, place, and stead to ask, demand, and receive of and from the proper officers of the United States all such sum or sums of money as may be due and owing to me on account of the sale of my said reservation under the treaty aforesaid, hereby authorizing my said attorneys, for me and in my name, to give such full and ample receipts and acquittances as may be necessary for all such sum or sums of money as may be found due to me, or may be paid over to them on my account, in consequence of the sale or sales aforesaid.

In testimony whereof, I, the said Viney, have hereunto set my hand and seal this 13th day of September, A. D. 1841.

VINEY (her x mark),
By the only heir, PUCK-SHA-NUBBY.

Signed, sealed, and acknowledged in our presence.
CHAS. JOHNSON.
WM. BARNETT, Int'r.

I certify that the above-named Viney is dead, and that Puck-sha-nubby is her legal heir and is the identical person who is entitled to the proceeds of Roll No. 14, on the Chickasaw orphan roll, under the treaty of the 24th May, 1834, and that he has assigned to Saffarrans & Lewis, by power of attorney, his respective interest understandingly, and that he acknowledged to have been paid a full consideration, and is therewith satisfied.

A. M. M. UPSHAW, *C. A.*

MARCH 29, 1842.

CHOCTAW NATION WEST.

We, the undersigned, commissioners recognized and appointed by the treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, do hereby certify that the west half of section 31, in township 4, third range west, in the Chickasaw Cession and State of Mississippi, was reserved for Viney, a Chickasaw orphan, Roll No. 14, and that the land has been sold by the United States for the benefit of said Viney; that said Puck-sha-nubby, the heir, is well known to us, and is of age, and is fully capable of managing his own affairs, and, in our opinion, it would be to the interest and advantage of said Puck-sha-nubby for the money arising from said sale to be paid to him by the United States in pursuance of the provisions of said treaty.

Given under our hands and seals this 13th day of September, A. D. 1841.

JAMES COLBERT. [SEAL.]
ISAAC ALBERTSON (his x mark). [SEAL.]
SLONE LOVE. [SEAL.]
ISH-TA-HA-TO-PA (his x mark). [SEAL.]

CHOCTAW NATION WEST.

I, A. M. M. Upshaw, Chickasaw agent, do hereby certify that the foregoing instrument was signed by the commissioners whose names appear thereto, and that to the best of my knowledge, information, and belief their statement is correct and accurate and I unite with them in their recommendation.

Given under my hand this 13th day of September, A. D., 1841.

A. M. M. UPSHAW, *C. A.*

No. 46.

Whereas, under and by virtue of the eighth article of a treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, the west half of section 34, in township 2 and range 4 west, in the Chickasaw Cession and State of Mississippi, was located for Ah-no-ah-ho-ka, a Chickasaw orphan, Roll No. 46; and whereas, by virtue of said eighth article of said treaty, and in pursuance thereof, the land so reserved has been sold for the benefit of the said Ah-no-ah-ho-ka, by and under the authority of the said United States:

Now be it known to all men that I, Ah-no-ah-ho-ka, a Chickasaw orphan, enrolled and located as such, have made, constituted, and appointed, and by these presents do make, constitute, and appoint Daniel Saffarrans and Felix Lewis my true and lawful agents and attorneys in fact, for me and in my name, place, and stead to ask, demand, and receive of and from the proper officers of the United States all such sum or sums of money as may be due and owing to me on account of the sale of my said reservation under the treaty aforesaid, hereby authorizing my said attorneys, for me and in my name, to give such full and ample receipts and acquittances as may be necessary for all such sum or sums of money as may be found due to me, or may be paid over to them on my account, in consequence of the sale or sales aforesaid.

In testimony whereof, I, the said Ah-no-ah-ho-ka, have hereunto set my hand and seal this 10th day of September, A. D. 1841.

AH-NO-AH-HO-KA (her x mark). [SEAL.]

Signed, sealed, and acknowledged in our presence.

CHAS. JOHNSON.
WM. BARNETT, *Interpreter*.

I certify that the above-named Ah-no-ah-ho-ka is the identical person who is entitled to the proceeds of Roll No. 46, on the Chickasaw Orphan Roll, under the treaty of the 24th of May, 1834, and that she has and did assign to Saffarrans and Lewis, by power of attorney, her respective interest understandingly, and that she acknowledged to have been paid a full consideration, and is therewith satisfied.

A. M. M. UPSHAW, *C. A.*

MARCH 29, 1842.

CHOCTAW NATION WEST.

We, the undersigned, commissioners, recognized and appointed by the treaty made and concluded at Washington on the 24th day of May, A. D., 1834, between the United States and the Chickasaw Nation of Indians, do hereby certify that the west half of section 34, in township 2, fourth range west, in the Chickasaw Cession and State of Mississippi, was reserved for Ah-no-ah-ho-ka, a Chickasaw orphan, Roll No. 46, and that the land has been sold by the United States for the benefit of said Ah-no-ah-ho-ka; that said Ah-no-ah-ho-ka is well known to us, and has married, and is fully capable of managing her own affairs, and, in our opinion, it would be to the interest and advantage of said Ah-no-ah-ho-ka for the money arising from said sale to be paid to her by the United States in pursuance of the provisions of said treaty.

Given under our hands and seals this 10th day of September, A. D., 1841.

JAMES COLBERT. [SEAL.]
ISAAC ALBERTSON (his x mark). [SEAL.]
SLONE LOVE. [SEAL.]
ISH-TA-HA-TO-PA (his x mark.) [SEAL.]

CHOCTAW NATION WEST.

I, A. M. M. Upshaw, Chickasaw agent, do hereby certify that the foregoing instrument was signed by the commissioners whose names appear thereto, and that to the best of my knowledge, information, and belief their statement is correct and accurate, and I unite with them in their recommendation.

Given under my hand this 10th day September, A. D. 1841.

A. M. M. UPSHAW, *C. A.*

No. 50.

Whereas, under and by virtue of the eighth article of a treaty made and concluded at Washington on the 24th day of March, A. D. 1834, between the United States and the Chickasaw Nation of Indians, the south half of section 27, in township 7 and range 2 west, in the Chickasaw Cession and State of Mississippi, was located for Kulkah, a Chickasaw orphan, Roll No. 50; and whereas by virtue of said eighth article of said treaty, and in pursuance thereof, the land so located, or some part thereof,

has been sold for the benefit of the said Kul-kah, by and under the authority of the said United States:

Now be it known to all men that I, Kul-kah, a Chickasaw orphan, enrolled and located as such, have made, constituted, and appointed, and by the presents do make, constitute, and appoint Daniel Saffarrans and Felix Lewis my true and lawful agents and attorneys in fact, for me and in my name, place, and stead to ask, demand, and receive of and from the proper officers of the United States all such sum or sums of money as may be due and owing to me on account of the sale of my said reservation under the treaty aforesaid, hereby authorizing my said attorneys, for me and in my name, to give such full and ample receipts and acquittances as may be necessary for all such sum or sums of money as may be found due to me, or may be paid over to them on my account, in consequence of the sale or sales aforesaid.

In testimony whereof I, the said Kul-kah, have hereunto set my hand and seal this 2d day of December, A. D. 1841.

KUL-KAH (his x mark). [L. S.]

Signed, sealed, and acknowledged in our presence.
JNO. PENN.
J. M. SKELTON.

I certify that the identical Chickasaw orphan above named, Kul-kah, is the identical Chickasaw entitled to the proceeds of Roll No. 50, on the Chickasaw Orphan Roll, under the treaty of the 24th May, 1834, and that he has and did assign to Saffarrans & Lewis, by power of attorney, his respective interest understandingly, and that he acknowledged to have been paid a full consideration, and is therewith satisfied.

A. M. M. UPSHAW, *C. A.*

MARCH 29, 1842.

CHOCTAW NATION WEST.

We, the undersigned, commissioners recognized and appointed by the treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, do hereby certify that the south half of section 27, in township 7, second range west, in the Chickasaw Cession and State of Mississippi, was reserved for Kul-kah, a Chickasaw orphan, Roll No. 50, and that a part thereof has been sold by the United States for the benefit of said Kul-kah; that said Kul-kah is well known to us, and has married, and is fully capable of managing his own affairs, and, in our opinion, it would be to the interest and advantage of said Kul-kah for the money arising from said sale to be paid to him by the United States in pursuance of the provisions of said treaty.

Given under our hands and seals this 2d day of December, A D. 1841.

ISH-TE-HO-TO-PA (his x mark). [SEAL.]
ISAAC ALBERTSON (his x mark). [SEAL.]
JAMES WOLF. [SEAL.]
SLONE LOVE. [SEAL.]

CHOCTAW NATION WEST.

I, A. M. M. Upshaw, Chickasaw agent, do hereby certify that the foregoing instrument was signed by the commissioners whose names appear thereto, and that to the best of my knowledge, information, and belief their statement is correct and accurate, and I unite with them in their recommendation.

Given under my hand this 2d day of December, A. D., 1841.

A. M. M. UPSHAW, *C. A.*

Whereas, under and by virtue of the eighth article of a treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, the west half of section 26, in township 5 and range 4 west, in the Chickasaw Cession and State of Mississippi, was located for Che-kah-ta, a Chickasaw orphan, Roll No. 103; and whereas, by virtue of said eighth article of said treaty, and in pursuance thereof, the land so located has been sold for the benefit of the said Che-kah-ta, by and under the authority of said United States:

Now be it known to all men that I, Che-kah-ta, a Chickasaw orphan, enrolled and located as such, have made, constituted, and appointed, and by these presents do make, constitute, and appoint Daniel Saffarrans and Felix Lewis my true and lawful agents and attorneys in fact for me and in my name, place, and stead to ask, demand, and receive of and from the proper officers of the United States all such sum or sums of money as may be due and owing to me on account of the sale of my said reservation under the treaty aforesaid, hereby authorizing my said attorneys, for me and in *my name, to give* such full and ample receipts and acquittances as may be neces-

sary for all such sum or sums of money as may be found due to me, or may be paid over to them on my account, in consequence of the sale or sales aforesaid.

In testimony whereof, I, the said Che-kah-ta, have hereunto set my hand and seal this 2d day of December, A. D. 1841.

CHE-KAH-TA (her x mark).

Signed, sealed, and acknowledged in our presence.
J. M. SKELTON.
A. P. SHELDON.

I certify that the above-named Che-kah-ta is the identical person who is entitled to the proceeds of Roll No. 103, on the Chickasaw Orphan Roll, under the treaty of the 24th of May, 1834, and that she has and did assign to Saffarrans and Lewis, by power of attorney, her respective interest understandingly, and that she acknowledged to have been paid a full consideration, and is therewith satisfied.

A. M. M. UPSHAW, *C. A.*

MARCH 29, 1842.

CHOCTAW NATION WEST.

We, the undersigned, commissioners recognized and appointed by the treaty made and concluded at Washington on the 24th day of May, A. D. 1834, between the United States and the Chickasaw Nation of Indians, do hereby certify that the west half of section 26, in township 5 and range 4 west, in the Chickasaw cession and State of Mississippi was reserved for Che-kah-ta, a Chickasaw orphan, Roll No. 103, and that the whole thereof has been sold by the United States for the benefit of said Che-kah-ta; that said Che-kah-ta is well known to us, and has married, and is fully capable of managing his own affairs, and, in our opinion, it would be to the interest and advantage of said Che-kah-ta for the money arising from said sale to be paid to him by the United States in pursuance of the provisions of said treaty.

Given under our hands and seals this 2d day of December, A. D. 1841.

ISH-TE-HO-TO-PA (his x mark). [SEAL.]
ISAAC ALBERTSON (his x mark). [SEAL.]
JAMES WOLF. [SEAL.]
SLONE LOVE. [SEAL.]

CHOCTAW NATION WEST.

I, A. M. M. Upshaw, Chickasaw agent, do hereby certify that the foregoing instrument was signed by the commissioners whose names appear thereto, and that to the best of my knowledge, information, and belief their statement is correct and accurate.

Given under my hand this 2d day of December, A. D. 1841.

And I unite with them in their recommendation.

A. M. M. UPSHAW, *C. A.*

The facts as to the signature of these recommendations and as to the agent's certificate are substantially the same as already hereinafter set forth in the preceding finding; and the result was the same, to wit, the Indian orphans did not receive the full value of their claims, but were imposed upon; nor did their assignees receive full value, as payment was made by the Government in State stock, in which the fund was invested and which was worth much less than par. The orphans did, however, receive some value, and it does not appear that in this matter or in that of the incompetents any protest or recommendation was made to the United States Government tending to put that Government on its guard or upon notice as to what was taking place between the traders and individual Indians. There was nothing suspicious upon the face of the certificates or recommendations described in this and the preceding finding other than what appears in these findings.

CONCLUSION OF LAW.

The court find the law as stated in the opinion.

OPINION.

DAVIS, *J.*, delivered the opinion of the court:

The removal of the Choctaws, Cherokees, and Chickasaws from the territory which they occupied at the beginning of this century gave rise to numerous difficult and complicated questions; first, questions political in their nature, all now happily ended by the settlement of the different tribes in the Indian Territory, where they

are successfully pursuing the path of modern civilization; second, questions financial in their nature, springing from the treaties by virtue of which the Indians emigrated from the East.

It became necessary for the protection of the Indians, no less than for the advantage of the whites, that the tribes should move west of the Mississippi. The Indian was not prepared to surrender his tribal organization, and, taking land in severalty, to settle into the domestic life of the American citizen and into Caucasian methods of agriculture; on the other hand the United States could not, even had they desired, restrain the advance of their own people.

The Choctaws and Cherokees have already been before us demanding an adjustment of long pending controversies with the Government, and now the Chickasaws, coming by a very different channel and under a very different grant of jurisdiction, invoke our aid for the same purpose.

Cases of this kind are most intricate, and are, for a court of law, most difficult to decide satisfactorily. The questions of law founded on the treaties and statutes present obstacles surmounted with comparative ease, but the facts are most difficult to find upon evidence at once competent and convincing. Over fifty years ago these Chickasaw Indians were gathered from the broad plains of the Southern States; they came into the place of rendezvous in straggling detachments; steam-boats were employed to transport them, upon which many of them refused to go; the mode of the tribe's assembling caused delay and expense; conductors, agents, interpreters, and other guides or servants were necessarily furnished them; many of the tribe went overland, absolutely refusing water transit, and were, in some instances, months making the journey; others went part of the way by land and part of the way by water; the exact number taking either route is impossible of exact ascertainment, as is the total population of the nation at the time, and the number of those who remained at home preferring to share the white man's system of government to an emigration westward.

The Indians complain that the transfer was extravagantly managed by the Government agents; that the treaty agreement was not fulfilled; that waste at least, if not actual fraud upon their rights, was committed by the officers acting for the United States, the guardians, in aid of the Indians, the wards.

More than fifty years after the event, upon testimony enormous in quantity but unsatisfactory in quality, we are called upon to examine these numerous questions of fact, as well as others, in relation to the disbursement of trust funds held by the Government for certain specified classes in the Chickasaw Nation.

The case is important in that it involves the just dealing of a powerful and rich Government with a weak tribe whose valuable lands were taken for a consideration alleged not to have been fairly fulfilled; and in that it also involves a sum of money of the utmost importance to the claimants, and which, if allowed, will make serious inroad upon the treasury of the defendants.

In furtherance of the policy of transfer to the Indian Territory, several treaties were made with the Chickasaws, then principally resident in Mississippi. The first of these treaties was concluded October 20, 1832, to which certain explanatory articles were added two days later (7 Stat. L., pp. 381, 388); May 24, 1834, another treaty was concluded (*Ibid.*, pp. 450, 456); finally, the 22d of June, 1852, a third treaty was signed (10 Stat. L., p. 974) from which directly grew the reference to this court.

By the treaty of 1832 the Chickasaws declared that rather than be subject to State laws they preferred to remove to the West, where they might be governed by their own laws, and for that purpose had determined to sell their lands and to seek a new home. To accomplish this, and with the President's approval, they agreed to cede to the United States their lands east of the Mississippi, the lands to be surveyed as public lands by the Government and offered for sale, all the money received to be paid over to the Chickasaw Nation less "the whole cost and expenses of surveying and selling the land, including every expense attending the same." The nation agreed to hunt up a home west of the Mississippi, but in the event of failing in that prior to the first public sale of their eastern lands, they promised to select out of the surveys a comfortable settlement for every family upon a certain specified allotment basis. When the Chickasaws were ready to remove west they were to notify the President, who was then to furnish them with the funds necessary for their transportation and journey and for one year's provisions after reaching their new home, the cost thereof to be ultimately refunded from the proceeds of the ceded lands, the money from which was to be largely invested by the President in interest-bearing or dividend-paying stocks.

The treaty of 1834 related largely to the protection of those Indians entitled to land who were orphans or who were deemed incompetent to manage their affairs. It provides a plan for their protection, it makes various provisions affecting reservations of land, and generally covers the same subject as the treaty of 1832, which to some extent it repeals. These treaties we shall hereafter refer to more in detail.

In February, 1837, the chiefs and headmen of the Chickasaws notified the President that they were ready to remove to the Indian Territory, and asked that he provide means for their transportation and subsistence. This was done, and the tribe removed by degrees from Mississippi to the country of their friends and allies, the Choctaws, who had already gone west. After a temporary sojourn there they took up the lands upon which they still live. The expenses incurred by United States officers in the removal were charged against the nation's fund, and upon these charges is founded the first general complaint of the Chickasaws, the second being based upon the wrongful payment by the United States to persons not entitled to receive it of Chickasaw money held in trust under the treaty of 1834 for the incompetents and orphans.

Article 4 of the treaty of 1852 was designed to quiet these complaints, and, as amended in the Senate, it provided in substance as follows:

That an account should be prepared under the direction of the Secretary of the Interior, exhibiting in detail all the moneys which from time to time had been placed in the Treasury to the credit of the nation "resulting from the treaties of 1832 and 1834, and all the disbursements made therefrom," this account to be submitted to the Chickasaws, who in a reasonable time could file exceptions to it, these exceptions to be referred to the Secretary of the Interior, who (and we now quote the words of the treaty) "shall adjudicate the same according to the principles of law and equity, and his decision shall be final and conclusive on all concerned." As to the money of the orphans and incompetents alleged to have been "wrongfully paid out to persons having no right to receive the same," it was stipulated that the cases should be investigated by "the agent of the United States under the direction of the Secretary of the Interior, and if it shall appear to the satisfaction of the said Secretary that any of the orphans and incompetents have been defrauded by such wrongful payment, the amount thus misapplied shall be accounted for by the United States as if no such payment had been made."

This article (IV) the Senate amended by adding certain provisos, one of which was that the United States should not be under obligation to reimburse expenditures already made in conformity with the treaties of 1832 and 1834; another was that the United States should not be liable to repay moneys held in trust for the orphans and incompetents, "in any case in which payment of such moneys had been made upon the recommendation or certificate of the persons appointed for that purpose in the fourth article of the treaty of 1834, or of their successors, and in other respects in conformity with the provisions of that article;" and a third proviso absolved the United States from any responsibility as to land disposed of in conformity with treaties of 1832 and 1834.

The account called for by the treaty was prepared; it was submitted to the Chickasaws in 1868; and in 1869 exceptions to it were filed in the Department of the Interior; some preliminary investigation was thereafter made, but no definite action was taken until the 8th day of May, 1883, when the Secretary transmitted the matters in controversy to this court for our "consideration and action in accordance with the provisions of section 2 of the act of March 3, 1883," known as the Bowman act.

The Choctaw case came to us by special act of Congress (21 C. Cls. R., 59), as did the Cherokee case (20 C. Cls. R., 449), which was in effect an action between the eastern and western bands of the tribe, an action in which the United States were interested but as stakeholders. The Chickasaw case reaches us by authority of a legislative grant of jurisdictional power very different in its nature from the remedy and jurisdiction specifically given in each of the former cases with the express assent of the Indian tribes who were parties to them.

The rights of the Chickasaw Nation are founded upon a treaty, an instrument which is a contract between the parties, and also a law imposed by the Government upon its own citizens and agents. As a contract, the Chickasaws are entitled to all its benefits until it is varied by mutual consent or annulled in some manner recognized by law. The case now before us, as defined by the fourth article of the treaty of 1852, is divisible into two parts: First, the management and disbursement of the general funds—as to this branch the claimants are entitled to an account, to exceptions thereto, to a reference to the Secretary of the Interior, to an adjudication by him on principles of law and equity, and to a decision by him which shall be final and conclusive on all concerned; second, as to the money of the orphans and incompetents, the claimants have a right to an investigation by the agent of the United States under the direction of the Secretary of the Interior, and to an account for the moneys misapplied, should it appear to the Secretary's satisfaction that any wrongful payment has been made. On the first branch the Secretary is to finally adjudicate; on the second branch the Secretary is to be satisfied as to the wrongful payment.

In the treaty, therefore, is to be found no authority or permission from which any power can be inferred authorizing this court to act in any way in regard to the case at bar.

The only statute which could give us jurisdiction when this case was transmitted was the Bowman act.

The Indians are not citizens of the United States; their rights are founded upon treaty, and as this statute gives them no privileges, it can impose upon them no burdens which they do not voluntarily accept. The authority given the Secretary by the treaty is in its nature judicial, and as such cannot be delegated. It is specific, under a clear and unambiguous agreement, by which the Indians referred the dispute to him and to no one else; they agreed to abide by his decision, and did not agree to abide by the decision of this court. The power of final decision the Secretary can not delegate, and if that were all in the case we could proceed no further in it. But the treaty also authorizes, as a preliminary to the Secretary's decision, an investigation or examination; that he not only has a right to depute, but the treaty in terms provides for such action on his part. Such an examination, while it was begun some years since, has never passed beyond the preliminary stages, and is therefore a matter pending in the Department and capable of reference hither. (Jackson *v.* U. S., 19 C. Cls. R., p. 508.)

We do not understand that the restriction of section 1066 of the Revised Statutes, excluding from our jurisdiction a claim "growing out of or dependent on any treaty stipulation entered into with foreign nations or with the Indian tribes" affects this case. That restriction is upon cases defined in sections 1059 and 1063 of the Revised Statutes, cases in which final judgment is entered, and it can not be held to apply to the jurisdiction since given by the act of 1883, a jurisdiction which in this case, as to the Secretary of the Interior, is in effect advisory, and subject to the exceptional power, in terms given him by treaty, of final adjudication of the issues raised between the United States and the Chickasaw Nation.

It has been suggested, but not argued at the trial, that the report of the conference committee upon the bill which in part became the act of March 3, 1887, indicates their opinion, if not their purpose, to exclude treaty cases from the jurisdiction of this court under the Bowman act.

But the twelfth section, which the committee struck out because "the conferees thought best not to allow an alien to sue on the basis of treaty or intentional (*sic*) [*international?*] obligations at the will of the Secretary of State, and thought that the political power of the Government should be consulted," contained a provision that the Secretary of State might refer a claim in behalf of an alien against the United States growing out of any treaty power or international obligation, with the consent of the representatives of the Government of such alien, "to hear and determine the same upon the principles of justice and international law, and to render judgment as those principles require," with right of appeal to the Supreme Court. This was an extension of the jurisdiction of the court to enter judgment, or a modification of section 1066, excluding treaty cases from such jurisdiction.

The committee was not willing to go thus far; but, while striking out that section, they re-enacted, in the very next section—now section 12 of the present act—the second section of the Bowman act, authorizing the head of a Department to transmit any claim or matter to the court with two changes only: one that the reference should be with the consent of the claimant, and the other omitting the words "for its guidance and action" in reference to the effect of the report of the facts and the law to the Department.

The jurisdiction of the Bowman act is much like that of the organic act of February 24, 1855, whereby the court was to report the facts and the law to Congress, without entering judgment, and under that act the court always took cognizance of treaty cases, and reported the facts and law thereon. This construction was affirmed by Congress by the act of 1863, extending jurisdiction to the entry of judgment, from which, section 9 of that act—now Revised Statutes, section 1066—excepted treaty cases other than those then pending in the court.

The only claim or matter excepted from our jurisdiction under the Bowman act are specifically named in sections 3 and 4, and treaty claims are not among them.

The courts in all controversies between the Government and the Indian tribes have adopted a theory of interpretation favorable to the tribes; and while the rules of law applicable to such controversies are not so strict as those governing differences between guardian and ward, they go this extent, as has been held, that doubts are to be resolved in favor of the Indians, that they are not to be prejudiced by mere technical construction, and that words of doubtful import are to be taken most strongly against the United States.

By the two treaties of 1832 and 1834 the United States undertook a general supervision and care of the Chickasaws; a supervision and care more detailed in definition, more important in essence than that of trustee to *cestui que* trust, or even than that of guardian to ward, in effect much resembling the relation of parent to child. The Indian lands were to be surveyed and sold by the United States; the proceeds were to be invested and held for the Indians by the United States. The agent, the land surveyor, register, and clerks, paid for by the Indians, were to be named by the

United States; the Indians were not to go to war without the consent of the United States, except in self-defense, and then were to be protected by the United States—in fact, without proceeding further with an analysis of the two treaties, it may be assumed that any one who examines them will find the Government accepting most exceptional and almost parental relations towards the Indians.

The nation was oppressed (Art. I, Treaty 1832) by being made subject to State jurisdiction. Ignorant of the language and the laws of the white man, they could not understand or obey them. Rather than submit to such an evil they preferred to seek a new home, where they might live and be governed by their own laws. Sympathizing with them and agreeing with them, the President entered into the treaties—treaties manifestly intended to protect the Indians, to guard them so far as possible from the hardships and evils of enforced emigration. The United States assumed therefore a peculiar trust, a trust of guardianship and control; a trust not only financial, but largely personal in its nature.

One branch of this trust, the financial one only, is now before us; and on one side it is contended that objection being made by the Indians to the accounts furnished by the United States, it is essential for the latter to prove the honest and economical disbursement of the disputed items, while on the other hand it is urged that the presumption is in favor of the honesty of the account.

Fifty years have passed since the first of these expenditures was made, and the last was made some years before the treaty of 1852. Many important events have occurred since then; the country has been convulsed by civil war; the officers having charge of the emigration are dead, or at least are not obtainable; no fraud is alleged or shown on their part; the Indians were to some extent cognizant at the time of what took place; the evidence on either side is necessarily scanty in substance, however full in volume; there is a strong probability of honesty in every such transaction, and there is also an inevitable waste. These considerations, with others which will occur to any one who scans this voluminous record, induce us to eliminate any prima facie presumption, and forbid us from throwing upon either side the onus of meeting such a presumption. In fact, at this late day to allow the claimants to rest on their exceptions and to require of the Government proof that each of the hundreds of small items in the accounts represents an honest, economical, and legal disbursement would produce an immediate final decision adverse to the defendants; while a demand upon the claimant for proof of a dishonest, extravagant, or illegal disbursement in each instance would throw them out of court at the outset, without substantial investigation into their rights.

No arbitrary rule of presumption can be introduced into a case of this nature. On the contrary, a middle course, aiming at substantial justice, must be pursued; and while each side has formally and properly reserved all its rights, the case has been in effect presented substantially upon this theory.

We now proceed to the consideration of the several specific objections made by the claimants to the account made and presented to them by the United States in fulfillment of the provision contained in the treaty of 1852.

William M. Gwin was an agent of the Chickasaws, deputed to attend generally to their business with the United States, and, among other duties, he was to secure the payment of interest upon State stocks in which the Chickasaw funds had been invested, and wherein default had been made. The compensation provided for him in his power of attorney was enormous, and he surrendered it, together with all claims under it, for another instrument, authorizing him, for a contingent fee of 50 per cent., to recover the value of certain damaged provisions furnished the Indians by the United States. He had discovered the charge made against the Chickasaw account for these provisions, and he was successful in securing a credit for the Indians of the provisions' value, less the 50 per cent. fee, which was paid him by the United States and charged against the Chickasaws.

We eliminate from the controversy questions as to the validity, between the Indians and Gwin, of the power of attorney, and as to the right of Gwin to assign any emolument coming to him under it, for Gwin did perform service; the result desired was attained; his assignees were in fact paid; and the Chickasaws' fund is diminished by the amount so paid.

The question presented, then, is that of a trustee bound to feed his *cestui que trust* out of the trust fund, who furnishes the latter spoiled food, and thus forces the *cestui* to pay a large sum of money to obtain from the trustee the return of funds thus improvidently disbursed. Such a charge, it seems to us, should, in all equity and justice, be borne by the trustee. That the fee was too large, under the circumstances set forth in the findings of fact, if that be true, is not a defense, for the trustee paid it with open eye and full knowledge of the circumstances. The matter was fully discussed, and in two opinions did the Attorney-General approve the disbursement. If fair in amount as against the injured Chickasaws it was fair in amount as against the United States, through whose fault, error, or laches the injury occurred which caused the agent's employment and his compensation. *The provisions* furnished were damaged;

the Chickasaws were charged with the cost; the United States did not voluntarily make good the loss; and the Indians were put to expense in enforcing their claim to reimbursement. On the record as it stands, the trustee seems to have been negligent, for nothing is shown to excuse the bad quality of the food furnished, and being so negligent, and not having voluntarily repaired the fault, he should be held to account for the damage suffered by his innocent *cestui que trust*. We think courts of chancery in a controversy between individuals would reach a similar determination; but whether that be so or not, we, in the advisory capacity in which we act in this case, a case between a strong nation and a weak tribe, its wards, are of opinion that equity and justice require the United States to credit the Indians with this disbursement to Gwin of $56,021.99.

Strict provisions were made to protect the Chickasaws from extravagance in the management of the sales of their lands; the officers to be employed were carefully designated; their salaries were fixed; even the number of clerks and their rate of pay was specified, while the Land Office was to have temporary use of a section of Chickasaw territory. No complaint is presented of this class of expenditures made in Mississippi; but during some years clerks were employed in Washington attending here to the business of the nation in the Treasury and Interior Departments, and their pay, together with some minor and incidental expenses incurred in the usual course of their duty, are objected to by the claimants.

At the outset it may be admitted that nothing in the treaties in terms authorizes such expenditures. The only specific provisions in any way similar in nature to those thus incurred are for the salaries of officers to be stationed in Mississippi and employed in the survey and sale of lands; most careful limitation is put upon the number of such officers and upon their pay. There was to be a surveyor-general, with deputy surveyors, a clerk and a draughtsman, a land register, and a receiver of moneys, with a clerk each; the salary for each being limited and fixed (Art. VIII, treaty 1832). The United States, however, had assumed other duties than those directly pertaining to the survey and sale of lands; those duties were many and varied. For example, after survey allotments of lands were to be made to each family not immediately removing West until a determination to remove should be indicated to the President, when the allotments should be sold by him and the net proceeds paid over to the nation, as were the net proceeds of other lands (Art. IV, *ibid.*). Improvements were to be valued by a discreet person appointed by the President, and the amount of this valuation was to be paid to the owner out of the proceeds of land sales (Art. V, *ibid.*); the President, when notified, was to advance funds for the Chickasaw emigration and for the nation's support during a certain period, the amount thereof to be afterwards refunded from the proceeds of land sales (Art. X, *ibid.*); the United States were to invest Chickasaw funds in proper stocks for the benefit of the nation, to be drawn upon and disposed of in a manner described in the treaty upon certain contingencies (Art. XI, *ibid.*).

It seems unnecessary to cite further from the treaties to show that the United States assumed very important and onerous duties, entirely apart from and different from those to be performed by the surveyors, register, and receiver in Mississippi; the handling of the trust funds, the advance and refunding of money, the decisions as to the payment of incompetents' and orphans' moneys, and the numerous other burdens imposed could not be performed by the officers provided for in terms, but must be performed in Washington by the Government, acting by the President and his subordinates; nor were these expenses those attending the "surveying and selling" of lands. For the proper performance of this duty clerks are necessary, stationery and other similar expenses are necessary, and as it is elementary law that a trustee is entitled to be reimbursed from the trust fund the reasonable expenses necessarily incurred by him in the performance of the trust, we need now only inquire whether this sum of money includes only expenses necessary in their nature and reasonable in amount.

That they are necessary in nature is apparent; but it is objected that they are unreasonable in amount, and were incurred because of the uselessly cumbersome system of administration in force in Washington, which, however valuable in the general affairs of a great Government, is too intricate and expensive when applied to the care of trust funds.

When the Indians turned over the care of their finances to the United States they, it must be assumed, knew what they were doing, with whom they were dealing. A great governmental machine, with its lack of individual responsibility corrected by a system of checks and counter-checks can not be conducted as cheaply as the office of a private merchant or banker. But in return for the greater expense the Indians received two very substantial benefits; first, absolute responsibility, which they never could have got from an individual trustee; second, freedom from any charge by way of compensation to the trustee, which it is unlikely that they would have received from any individual, if it were possible for any individual to assume the multiform cares of this trust.

Nor can they complain of surprise; for the system of Hamilton is to-day in force in the Treasury; the theories of executive administration have been wonderfully conservative in all the Departments, and disbursements of this nature have been uniformly charged against the various Indian funds. Something less than $5,000 a year we do not consider extravagant under all the circumstances for the care and administration of Chickasaw interests, and we therefore are of opinion that this charge of $79,969.46 for clerk-hire in Washington is proper in its nature and not unreasonable in its amount.

In assisting the emigration various individuals were employed by the Government styled conductors, assistant agents, or having some other similar title; their pay and expenses were charged against the nation's fund, and these charges are objected to not as unnecessary or extravagant, but because, as is alleged, they should under the treaties be borne by the United States and not by the Indians. Article X of the treaty of 1832 provides that when the President shall receive notice from the Indians of their intention to remove, he shall furnish them "the necessary funds and means for their transportation and journey, and for one year's provisions after they reach their new homes in such quantity as the nation may require, and the full amount of such funds, transportation, and provisions [was] to be paid for out of the proceeds of the sales of the ceded lands"; further, should the Chickasaws remove before that money was available, then the United States should furnish them "any reasonable sum of money for national purposes which may be deemed proper by the President," to be afterwards refunded by the Indians.

The payments complained of were actually made; they were necessary; they are not shown to be extravagant; whether they were authorized by treaty is the real question in issue. The treaty of 1832 is rather ambiguous on this point, and it is contended that the means for the Indians' "transportation and journey" which the President was authorized to furnish naturally and properly included charges of this nature, as without such assistance the Indians could not emigrate with safety and comfort. On the other hand it is urged that the phraseology of the treaty of 1832 allowed the Government to charge against the Indians only the cost of transportation and supplies, and these being expressly mentioned, other charges are excluded on the doctrine of *expressio unius exclusio alterius*. The Indians are entitled to have all doubts settled in their favor, and words of doubtful import are to be taken most strongly against the United States. An application of this doctrine to the case at bar might support the claimants' position. The treaty of 1834, however, gives a clear statement of the intention of the parties when it provides in its thirteenth article that the United States shall furnish competent persons to conduct the Indians to their destination, and also supplies for a certain period, "the supplies so afforded to be chargeable to the general Chickasaw account." Here is a distinct provision for conductors, a distinct provision for supplies, and a distinct provision that the cost of supplies only shall be charged against the Indians. It is evident that the conductors were to be furnished by the United States and paid by the United States.

The letter of the chiefs, dated in October, 1837, is without effect upon this branch of the case, first, because the treaties standing together are clear in intent and the chiefs could not vary them; and, second, because the letter manifests no such purpose or desire. The letter suggests the appointment of superintendents, not conductors, and suggests the appointment of only "one or more" such officers, manifesting an intention to confine the number within very narrow limits; an intention further shown by the fact that the chiefs give the names of two, and only two, individuals the appointment of either or both of whom would be satisfactory to them and their people. The duties of these officers were different in nature from those of conductors; they were to superintend the removal, to take a census, to provide means for transportation and subsistence; in short, the superintendent (for in fact one only was appointed) was a superior and supervising officer, while the conductors were merely subordinate employés, acting under his direction in carrying out the duties imposed upon him. The facts that the chiefs desired all "other necessary expenses" attending the emigration to be paid out of the nation's fund does not extend the scope of the treaties, and must be read and understood in the light of their provisions, which, as we have seen, are on this point sufficiently clear. In our opinion, the thirteenth article of the treaty of 1834 is decisive of the question, and the Chickasaw fund should be credited with the sum of $26,563.68.

The United States officers having charge of the emigration entered into a contract with one Simeon Buckner to transport the Chickasaws and their baggage on steamboats, at an agreed rate, to the Indian Territory. The nation authorized an arrangement for water transportation, and pursuant to this authority the contract was made and the necessary boats were provided. When the time came to start many of the Indians refused to take the boats, and large bodies of them went overland, either all the way or in some instances as far as Little Rock, where they were taken up by the boats and carried on to their destination. The contract with Buckner provides a rate of compensation, but it does not designate the number of passengers for whom he was ex-

pected to provide transportation, nor does it limit the time within which the service was to be performed. On these points we are left in the dark; but we find that Buckner was ready on time to perform the duty imposed upon him; that he was much delayed by the Chickasaws, who were irregular and dilatory in reporting on board; that the amount of baggage was far in excess of what had been expected, while a large number of Indians declined to accept the transportation provided for them by their own request. After careful consideration of all the facts developed in this branch of the case and set forth in the findings, we are of opinion that the Government agents were fully authorized to contract with Buckner as they did, and that he had a right to expect and was bound to provide for the transportation of some four thousand Indians. If this were all, we should find Buckner entitled only to $61,000, the contract price for the transportation of this number of Indians, with the prescribed amount of baggage. But it is by no means all; the Indians delayed the boats; they carried baggage far in excess of the allowed amount; they carried a great deal of stock; some were picked up on the way, failing to get through by land, and Buckner was much impeded and delayed in the performance of his contract, and undoubtedly put to increased expense. He received under this contract $148,393.50, a gross sum, made up as follows:

Transportation of Indians	$39,652.00
Transportation of baggage	54,520.00
Demurrage	14,872.50
Damages	37,749.00
Corn freight	1,600.00
Total	148,393.50

Objection is made to $5,877.50 of the charge for transportation, to $14,672.50 of the charge for demurrage, and to the charge of $37,749 for damages.

This latter sum was paid in July, 1840. Long prior to this the Government officers in charge of the removal had paid Buckner $39,650 on account of his contract, but, apparently dissatisfied with this, Buckner had claimed additional compensation, on the ground that he had been ready for all the Indians, and through no failure of his they had not been transported as agreed; therefore he asked that his compensation be increased to the amount he would have received had all reported on his boats. The sum was allowed as "the balance of his account for the transportation of 5,338 Chickasaw Indians from Memphis, Tenn., to Fort Coffee, Arkansas, per contract, October 1, 1837." The contract price for transporting these Indians would be $77,401; adding to this the cost of the regulation amount of baggage per head, 30 pounds, at the full contract rate, $2.50 per hundred-weight, amounting to $4,000, and Buckner would be entitled to receive only $81,401. There is nothing to show that Buckner had a right to anticipate the removal of more than 4,000 Indians; a careful study of the evidence leads us to the conclusion stated in the findings that about that number he had a right to expect, and was bound to provide for. Then at the full contract price he would have received the sum of $61,000, made up as follows: 4,000 Indians, at $14.50 per head, $58,000; 120 hundred-weight baggage, at $2 50 per hundred weight, $3,000.

He also should have received the amount allowed for transportation of corn, $1,600, swelling the total to $62,600, leaving an excess paid him of $85,793.50.

The testimony is too unsatisfactory and incomplete for us to go into the detail of each item paid Buckner, and we are forced to treat the payments together, and to endeavor to discover, taking all the circumstances together, what would have been a reasonable and fair allowance under the circumstances. As he did not carry 4,000 Indians, as he had a right to provide for that number, as he provided for them, and through no fault of his they did not report on board, we think a fair measure of damage for the breach of contract is what he would have received had he been allowed to carry it out as stipulated and understood. This allowance, however, would include demurrage and other damage caused by the non-arrival of the Indians.

The objections made by the claimants, however, cover a sum much less in amount than would be allowed them on this theory of the case, and while the evidence is not sufficient to allow us to examine into the details of the various allowances to Buckner and the facts peculiar to each of them, still, considering the case as a whole, we are of opinion that he was overpaid certainly not less than the sum total of the various amounts objected to, and that sum ($58,299) should be credited to the nation.

On the question of rations there is little to add to what appears in the findings of fact. Under all the circumstances therein detailed we think the charge a proper one against the tribe.

The treaty of 1834 (Articles IV and VIII) divided the Chickasaws holding reservations into three classes: adults competent to manage their own affairs; adults not competent to manage their own affairs, called colloquially the "incompetents;" and minor orphans. Adults were permitted to dispose of their reservations upon compliance with certain requirements, while the incompetents were not allowed to sell, lease, or

otherwise dispose of their reservations, and as to them the treaty provided (Article IV) that no transfer should take place unless certain well-defined conditions were fulfilled.

The Chickasaws do not complain that the "incompetents'" lands were improperly sold, but they claim that in many instances the money coming from the sales was paid out of the Treasury in violation of that part of the treaty which required that the consideration of the sales "shall remain as part of the general Chickasaw fund in the hands of the Government until such time as the chiefs in council shall think it advisable to pay it to the claimant or to those who may rightfully claim under said claimant, and shall so recommend it." (Article IV.)

They further complain that the Government's action enabled Indian traders to defraud the "incompetents" of the greater part of the proceeds of the sales of their lands.

These complaints are founded substantially upon the following grounds:

First, the Government never had proof tending to show that the chiefs in council advised payment to a single incompetent of the money coming from the sale of his lands; second, the chiefs in council in fact never did give such advice.

To this the Government sets up in answer the treaty of 1852, which provides that the United States shall "not be liable to repay moneys held in trust for the benefit of the" orphans and incompetents when the payments have been made "upon the recommendation or certificate of the persons appointed for that purpose in the fourth article of the treaty of 1834, or of their successors, and in other respects in conformity with the provisions of that article;" and the defendants contend that the persons "appointed" were the persons named in the article, that is those persons commonly called commissioners, upon whose certificate only land could be sold, and therefore any certificate bearing their signatures is valid and binding upon the Chickasaws.

Denying this position and still contending that the approval of the commissioners is important only as to the sale of the reservations, and that the after payment of money from the fund depends for its validity upon the judgment of the chiefs in council, the Indians urge other matter in rebuttal, which we shall consider later.

The claimants' position then is: first, under the treaty of 1834 that all money paid out of the fund on the recommendation of the commissioners, without the recommendation of the chiefs in council, was wrongfully paid; and second, having proved the fact that the chiefs in council did not recommend the payment of any of the money, a *prima facie* case is presented of wrongful payment to persons having no right to receive; and thus is established the condition of relief required by the treaty of 1852. Should these points not be conceded, the claimants then proceed a step further and endeavor to show that the recommendations upon which the money was paid were fraudulent in character, that the facts certified were not true, that some of the commissioners' signatures were forgeries, that the alleged assignments by the individual Indians to the traders were not valid, and that through a conspiracy, to which some of the commissioners, the Indian agent, and the traders were parties, the individual incompetents were grossly imposed upon. It is particularly urged that the king's cross, or mark, was not affixed by him but by Albertson, one of the commissioners. This we have found to be true in fact, but we do not find that the king did or that he did not authorize Albertson so to affix his cross, for the evidence on this point does not seem to us sufficient to rebut the presumption that officers acting in performance of a duty imposed by law act honestly; and if the commissioners had any power at all in the matter they acted as the agents, not of the United States, but as the agents of the Chickasaws in carrying out a duty imposed upon them by the treaties for the protection of members of their own tribe. There is nothing in the record bringing home to the United States knowledge of the fact, if it be a fact, that Albertson defrauded his own people, or knowledge of the fact, if it be a fact, that the king, Ish-to-ho-to-pa, either wittingly or unwittingly, through his neglect or otherwise, was actively or through negligence a party to the fraud, if one was committed.

Be it conceded that Ish-to-ho-to-pa never did affix his cross-mark, nevertheless others of the commissioners did sign the certificates and signed them knowingly, and in doing this they acted for the Indians and did not act for the United States. If there were fraud in this transaction, if there were mistake, if there were negligence, the fraud, mistake, or negligence was that of the commissioners, or some of them. It was the fraud, mistake, or negligence of the Indians themselves, of the persons deputed by the Chickasaw Nation to protect the interests of individuals in the tribe, and any loss which has occurred to the individuals should be made good by the tribe. A ward can not impose upon his guardian, dissipate and waste the funds acquired through the imposition, and then secure a second recovery upon substantially the ground of his own wrong or negligence. Individual incompetents and orphans were undoubtedly imposed upon, and received in calicoes and ponies much less than the values of their claims, but such a result could not have been attained unless Ish-to-ho-to-pa, or Albertson, or their colleagues had been negligent or dishonest. It has not seemed to us necessary to go into the morals of the transaction, for whatever immorality existed

was shared by the commissioners, to whatever wrong was committed they were parties, in whatever conspiracy was formed they were absolutely necessary and principal elements.

The United States paid over the moneys upon what appeared upon their face to be properly signed certificates, certificates undoubtedly signed by some of the commissioners, certificates as to which at the time no complaint was made. The individual Indians accepted the insufficient consideration given them by the traders, and their authorities and agents presented no complaint, put the Government upon no inquiry. Under all these circumstances we do not think the United States under obligations to pay again the moneys already once paid over by them on this account, provided the certificate of the so-called commissioners was in law sufficient authority for the payment. Here a distinction is to be noted between the position of the "incompetents" and that of the "orphans."

The treaty of 1834 required that the incompetent trust fund should remain in the hands of the Government "until such time as the chiefs in council shall think it advisable to pay it to the claimants or to those who may rightfully claim under said claimants, and shall so recommend it." (Article IV.) The recommendation of the chiefs in council was therefore necessary as authority for a disbursement by the United States from this fund. Nevertheless, between the years 1840 and 1843 payments were actually made upon the certificates hereinbefore recited and without, so far as is shown to us, any recommendation by the chiefs in council. Then followed the treaty of 1852 (10 Stat. L., p. 974), which was evidently intended to satisfy existing grievances of the Chickasaws, and which contained this provision:

"It is also alleged by the Chickasaws that there are numerous cases in which moneys held in trust by the United States for the benefit of orphan and incompetent Chickasaws have been wrongfully paid out to persons having no right to receive the same. It is therefore further agreed, that all such cases shall be investigated by the agent of the United States, under the direction of the Secretary of the Interior. And if it shall appear to the satisfaction of said Secretary that any of the orphans and incompetents have been defrauded by such wrongful payment, the amount thus misapplied shall be accounted for by the United States, as if no such payment had been made." (Art. IV.)

That is, if it appear that incompetents' money has been paid out wrongfully, and paid out to persons not entitled to receive the same, then, if it also appear that any of the incompetents have been defrauded by the wrongful payment, the amount thereof shall be accounted for. There must have been, to justify recovery under this article, a wrongful payment, this payment must have been made to an unauthorized person, and the incompetent must have been defrauded. The Senate, however, when the treaty was before them, added several provisos, among them this at the end of the article just cited:

"*And provided further*, That the United States shall not be liable to repay moneys held in trust for the benefit of orphan and incompetent Chickasaws, in any case in which payment of such moneys has been made upon the recommendation or certificate of the persons appointed for that purpose in the fourth article of the treaty of 1834, or of their successors, and in other respects in conformity with the provisions of that article." (10 Stat. L., p. 976.)

It now becomes important to determine who were the persons appointed in the fourth article of the treaty of 1834 for the purpose of making a recommendation or certificate. That article names by their proper names seven individuals, the certificate of two of whom was necessary for the sale of a reservation, and this certificate was to show that the Indian owning or claiming the land was capable to manage his affairs. These seven are the only persons named by name in the article. Their certificate was to be indorsed by the agent, and the action was to be approved by the President, or such person as he might designate. Then follows the provision we have already discussed as to the recommendation of the chiefs in council, and after further details, not now important, as to the sale of lands, comes a provision that as the king and the delegation who signed the treaty might die, resign, or remove, any vacancy should be filled by the Secretary of War, after selections made by the chief, and after certificate by the Indian agent as to the qualifications, discretion, and ability of the person so selected. Therefore, in this article are mentioned by name seven persons, of whom five were the five who signed the treaty on behalf of the Indians; also the President of the United States, the Secretary of War, the Indian agent, and the chiefs in council. When the treaty of 1852 was approved by the Senate and ratified by the President, all the facts were before them. This is a presumption of law, which, in this case, is also established as a fact by the form and phraseology of the treaty and its amendments. The President and the Senate knew that some ten years before money had been paid from the orphans' and incompetents' accounts upon commissioners' certificates; they knew of charges that this money had been improperly paid; and yet how carefully they protected this particular class of payments. The President required proof not only that the money had been wrong-

fully paid, but that it had been paid to persons having no right to receive it, and also that the orphan or incompetent had been defrauded. The Senate went a step further and said, in effect, let all of these three points be established, and still we do not agree to account for the moneys, provided the payment was made either upon the recommendation or upon the certificate of the persons "appointed for that purpose' in the fourth article of the treaty of 1834.

The money of the incompetents, says the treaty of 1834, shall be paid over when the chiefs in council think it advisable and recommend it.

It has been in effect contended that the use of the words "persons appointed for that purpose" indicates an intention to make valid the acts, illegal in their inception, of the commissioners in recommending the payment of incompetents' money, by which they usurped a power vested in the chiefs in council. The use of the word "successors" in the same clause is supposed to be an additional indication of the parties' intent, as the word would not naturally be applied to a permanent body like the chiefs in council, but would naturally be applied to a temporary collection of named individuals as to whom succession was specifically provided. To these and similar arguments it may be answered that the Senate, in one article, was dealing in concise language with two subject-matters: First, the incompetents who, by Article IV of the treaty of 1834, were to be paid only when the chiefs in council should so recommend; second, the orphans who, by Article VIII of the same treaty, were to be paid only when a majority of the seven persons named in Article IV should so recommend. The treaty-making power knew that payments had been made to incompetents without a sign indicating even acquiescence on the part of the chiefs in council, and they knew of the payments to the orphans upon certificates correct upon their face, but alleged to be in fact fraudulent through the acts of some at least of the commissioners, the representatives of the Indian tribe. In the one case the United States had paid upon vouchers illegal on their face, in the other they had paid upon vouchers valid upon their face, but in fact fraudulent through the fault of the tribe. Thus was presented a clear reason for the distinction intended to be made between the claims of the incompetents and those of the orphans. Not one of the recommendations for payment to incompetents was made by the chiefs in council, the only body or the only persons appointed or authorized for the purpose in the treaty of 1834; but the "persons appointed" to make recommendation as to the orphans or "their successors" had, or at least some of them had, recommended the payments made to the orphans. In the case of the incompetents, the vouchers were on their face worthless; in the case of the orphans, the vouchers were on their face valid and could only be invalidated by proof of some wrong, neglect, or error, to which the Indians' representatives were necessary parties.

Where, then, there has been a wrongful payment to an incompetent, and where the payment had been made to a person having no right to receive it, and no person is entitled to receive money by virtue of assignment from an individual confessedly incompetent to manage his own affairs, then if the incompetent has in fact been defrauded, as he evidently was to some extent in the case before us, then and to that extent the United States should account to the Chickasaw Nation.

The eighth article of the treaty of 1834 made provision for protecting what are called in this case "orphan" Chickasaws—that is, males and females, under full age "whose father being dead, the mother again has married, or who have neither father nor mother." Their reservations might be sold upon the recommendation of a majority of the seven persons named in the fourth article, that the sale would prove advantageous to the parties interested; this recommendation was to receive the approval of the President or his agent, after which the proceeds of the sale were to be retained by the Government, or, if practicable, invested until the orphans came of age or married, when payment was to be made to those entitled to receive it, provided a majority of the commissioners with the Indian agent should certify that such a course would be to the advantage of those parties. It is now contended by the claimants that payment from the "orphans'" fund was made upon certificates not signed by a majority of the seven commissioners, and that but a small portion of the money ever in fact reached the orphans, the facts being substantially the same as in the case of the "incompetents." We have no doubt that the orphans were imposed upon and parted with their rights improvidently, but following the line of argument already marked out, we cannot hold the United States liable for their sufferings or hardships. The wards of the nation were not the individuals, Im-mi-ah-ho-ka, Viney, or Puck-sha-nubby, but the Chickasaw Nation; that nation set up in protection of its rights and in protection of the rights of its individual members, a set of men, Chickasaws, members of their own tribe, one their king, others headmen and members of their council, and to these the Government of the United States had a right to look with confidence for an honest and faithful performance of the duties imposed upon them in the treaty by their own nation's election. Their fraud, mistake, or laches can not raise any obligation in the United States, the party deceived of

misled by them, for they acted as the agents of the Indians, not as the agents of the Government.

We are of opinion that the treaty of 1852 applies to this claim, and while we have no doubt that individual orphans were badly treated we can not find that the Government is responsible therefor to the tribe whose members and selected officials and responsible representatives were parties to whatever wrong was done, to whatever injustice was committed.

We conclude from our examination of the case that the fund of the Chickasaw Nation should be credited with the sum of $240,164.58. In an action between individuals interest also would be allowed, for the issue presented is one of unauthorized disbursement by a trustee of trust funds expressly stipulated to be held invested in interest-bearing securities. We refrain, however, from expressing any opinion on this subject, as the question must necessarily be taken to the legislative department of the Government, which alone has power to grant relief, which will consider the equities of the case, and which will decide whether it is one wherein the doctrine should be waived that, as the sovereign does no wrong, and is ever ready and willing to pay just debts, the Government pays no interest.

A certified copy of the findings of fact herein and of this opinion will be sent by the clerk to the Secretary of the Interior.

IN THE COURT OF CLAIMS,
Washington, D. C.:

I certify that the foregoing is a true and complete copy of the findings of fact and opinion of court filed April 25, 1887, in the case of The Chickasaw Nation *vs.* The United States. No. 2. Department case.

Test.

This 23d day of May, 1887.

[SEAL.]

JOHN RANDOLPH,
Assistant Clerk, Court of Claims.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 43.

CATTLE FOR NORTHERN CHEYENNE INDIANS.

LETTER

FROM

THE SECRETARY OF THE TREASURY

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation to purchase stock cattle for the Northern Cheyenne Indians located at the Tongue River Agency, Mont.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 5, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior of the 24th ultimo, submitting an estimate for an appropriation of $25,000 for the purchase of stock cattle for the Northern Cheyenne Indians, located at Tongue River Agency, Mont.

Respectfully yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 24, 1887.

SIR: I have the honor to inclose herewith, for presentation to Congress, in accordance with the provisions of section 2 of the act of July 7, 1884 (23 Stats., 254), copy of a letter, of 23d instant, from the Commissioner of Indian Affairs, with the estimate of appropriation noted therein, in the sum of $25,000, which he desires may be inserted in the Indian appropriation bill when framed, said amount to be expended under the direction of the Secretary of the Interior in the purchase of stock cattle for the Northern Cheyenne Indians, located at Tongue River Indian Agency, Mont.

The matter has the approval of this Department.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 23, 1887.

SIR: I have the honor to submit herewith a communication from the United States Indian agent in charge of a portion of the Northern Cheyenne Indians, located at the Tongue River Agency, Mont., dated the 25th ultimo, in which he states that "in order that the annual appropriations for the subsistence of the Indians at said agency may at the earliest practical period be reduced to a minimum, and at any rate that the item of annual beef supply be wiped out at some definite time," he recommends that Congress be requested to make an appropriation to purchase a sufficient number of stock cattle (say 1,000 cows, with a proportionate number of bulls), the male increase of which, when available, to be used as a beef supply for these Indians, and that the stock cattle be issued to heads of families in lieu of any further meat supply by the Government.

Concurring in the views and recommendations of the agent as expressed in the said letter, I submit herewith an estimate of appropriation in the sum of $25,000, with the recommendation that the same be forwarded to Congress for its action and consideration, as an amendment to the bill making appropriation for the Indian service for the fiscal year ending June 30, 1889.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

Proposed amendment to the bill making appropriation for the Indian service for fiscal year ending June 30, 1889.

This amount, to be expended under the direction of the Secretary of the Interior in the purchase of stock cattle for the Northern Cheyenne Indians, located at the Tongue River Indian Agency, Mont., $25,000.

ASHLAND, MONT., *November* 25, 1887.

SIR: In order that the annual appropriations for the subsistence of the Indians of this agency may at the earliest practical period be reduced to a minimum, and at any rate that the item of annual beef supply be wiped out at some definite time, I respectfully suggest that Congress be induced to make an appropriation to purchase a sufficient number of stock cattle—say 1,000 cows, with proportionate number of bulls—the male increase of which, when available, to be used as a beef supply for these Indians, and the stock cattle to be issued at such time as the Department may determine to the heads of families in lieu of any further meat supply by the Government.

Stock cattle can now be purchased at a lower price than they have commanded for several years and at a lower price than it is probable they will sell in a year or two. The expense of herding and caring for them, in addition to that incident to the beef herd proper, would not be very great, and Indians could be, in a measure, employed in it. I earnestly request that this suggestion be considered by the Department, and if the idea is approved that I may be informed, when I shall make further suggestions in regard to details.

I have the honor to be, very respectfully, your obedient servant,

R. L. UPSHAW,
United States Indian Agent.

Hon. J. D. C. ATKINS,
Commissioner of Indian Affairs, Washington, D. C.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 44.

HOOPA VALLEY WAGON ROAD, CALIFORNIA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation for the construction of a wagon road from the Hoopa Valley Agency to the southern boundary of the Hoopa Valley Reservation, California.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January* 5, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior of the 27th ultimo, submitting an estimate for an appropriation of $5,500 for construction of a wagon road from Hoopa Valley Agency to the southern boundary of the Hoopa Valley Indian Reservation in California.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 27, 1887.

SIR: I have the honor to inclose herewith, for presentation to Congress, in accordance with the provisions of section 2 of the act of July 7, 1884 (23 Stat., 254), copy of a letter of the 24th instant, from the Commissioner of Indian Affairs, with estimates of appropriations noted therein in the sum of $5,500, or so much thereof as may be required, to be expended under the direction of the Secretary of the Interior in the construction of a wagon road, by Indian labor as far as possible, from Hoopa Valley Agency to the southern boundary of the Hoopa Valley Reservation in California, to afford the Indians of said reservation ac-

cess to market for their surplus supplies; also map and accompanying papers relating thereto.

The matter has the approval of the Department.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 24, 1887.

SIR: I have the honor to submit herewith a copy of a communication, dated January 29, 1887, received from William E. Dougherty, captain United States Army, and acting United States Indian agent at Hoopa Valley Indian Agency, Cal., in which, on behalf of, and at the request of, the Hoopa Valley Indians, he petitions Congress for an appropriation of money sufficient to construct a wagon road from the agency to the southwestern boundary of the reservation, a distance, as the grade would run, of about 8 miles.

He estimates roughly that to make a practicable grade about 7,000 cubic yards of earth per mile must be moved, besides much standing and fallen timber and here and there some rock.

A topographical sketch is appended hereto, made on a scale of 4 miles to the inch, which will give a general idea of the route from Humboldt Bay to Hoopa Valley, over which a good road is graded to within 7 miles of the reservation line.

He states that, in his belief, a good and permanent road can be graded from the valley to the line of the reservation on the summit at an expense of about $700 per mile.

The acting agent states that the Indians are now anxious for a road, and will gladly do the work, and can do it more cheaply than it can be done by white laborers under contract, and thus the measure would benefit them in every way. That they fully realize that while they remain shut up in the valley, without access to a market, except over a mule trail, they can have no hope of escaping the miserable hand-to-hand existence they have endured heretofore, and that industrial advancement, sufficient to enable them to meet the expectations of the Government and the people is impossible.

He further states that there are about 2,000 acres of fertile arable land in the valley, and a very fine open tract of perhaps 1,500 acres more on the hills northwest of it, and should the yield this year be the same per acre that it was last, the valley will produce about 520,000 pounds of wheat and 300,000 pounds of oats, about half of which will be needed for consumption and for seed. Next year these figures will be much more than doubled, if there is any hope that the surplus can be disposed of.

The Indians are therefore now face to face with a difficulty which there is only one way to meet at present, and that one way is to give them the means to open a way to a market.

In addition to this large yield of grain, the acting agent states that the valley produces great quantities of fine fruit, which could be marketed with profit at Eureka. Thirteen orchards are in the valley, that produced this year a surplus of about $2,500 worth of fruit that went to waste on the ground.

From the above statements of facts, I am of the opinion that it would be good policy to construct this road as a measure tending to self-support of these Indians, and in order to carry out the suggestions of Captain Dougherty, I submit herewith a draught of an estimate of appropriation in the sum of $5,500, with the recommendation that the same be forwarded to Congress for action and consideration as an amendment to the bill making appropriation for the Indian service for the fiscal year ending June 30, 1889.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

Proposed amendment to the bill making appropriations for the Indian service for the fiscal year ending June 30, 1889.

This amount, or so much thereof as may be necessary, to be expended under the direction of the Secretary of the Interior, in the construction of a wagon road by Indian labor, as far as possible, for the Hoopa Valley Agency, Cal., to the southwestern boundary of the Hoopa Valley Reservation, Cal., in order to afford the Hoopa Indians access to a market for their surplus supplies, $5,500.

UNITED STATES INDIAN SERVICE,
Hoopa Valley Agency, Cal., January 29, 1887.

SIR: I have the honor to inclose a copy of a petition made on behalf of the Hoopa Indians to Congress, for an appropriation of money sufficient to construct a wagon-road from the agency to the reservation line. The paper is sent for the information of the department commander, and with the hope that he may think it advisable to aid the enterprise by recommending it.

I am, sir, very respectfully, your obedient servant,

WM. E. DOUGHERTY,
Captain, U. S. Army, Acting Agent.

ASSISTANT ADJUTANT-GENERAL,
Headquarters Department California, San Francisco, Cal.

FORT GASTON, CAL., *January* 29, 1887.

SIR: On behalf of and at the request of the Hoopa Valley Indians, I have the honor to refer hereby their petition to Congress through the honorable Commissioner of Indian Affairs and the honorable the Secretary of the Interior, for an appropriation of money sufficient to construct a wagon-road from this agency to the southwestern boundary of the reservation, a distance, as the grade would run, of about 8 miles.

The grade from the valley to the summit at the reservation line would be about 200 feet to the mile. I estimate roughly that to make a practicable grade about 7,000 cubic yards of earth per mile must be moved, beside much standing and fallen timber and here and there some rock.

Several practicable routes are presented from the valley, the shortest, and in my opinion the most practicable, being that by way of Supply Creek, an affluent of the Trinity that divides the military post from the agency.

A topographical sketch is appended hereto, made on a scale of 4 miles to an inch, which will give a general idea of the route from Humboldt Bay to Hoopa Valley, over which a good road is graded to within 7 miles of the reservation line.

It is my belief that a good and permanent road can be graded from the valley to the line of the reservation on the summit at an expense of about $700 per mile.

Perhaps it might be done for less, but this can not be determined without making a profile, which I have not had time to do.

The Indians are most anxious for a road, and will gladly do the necessary work, and can do it more cheaply than it can be done by white labor or by contract, and thus the measure would benefit them in every way, and I am convinced that if they had

the means to do the work they would long since have made the road without assistance, for they fully realize that while they remain shut up in this valley and without access to a market, except over a mule trail, they can have no hope of escaping the miserable hand-to-mouth existence they have endured heretofore, and that industrial advancement sufficient to enable them to meet the expectation of the Government and the people is impossible.

There are about 2,000 acres of fertile arable land in the valley, and a very fine open tract of perhaps 1,500 acres more on the hills northwest of it. Should the yield per acre be the same this year that it was last year, in proportion, the valley will produce next summer about 520,000 pounds of wheat and about 300,000 pounds of oats. About half of this only will be needed for consumption and for seed.

Next year these figures will be much more than doubled if there is any hope that the surplus can be disposed of.

The Indians are, therefore, now face to face with a difficulty which there is only one way to meet at present, and that one way is to give them the means to open a way to a market. Beside the produce that can be grown here, the valley produces great quantities of fine fruit, which could be marketed with profit at Eureka. There are 13 orchards in the valley that produced this year a surplus of about $2,500 worth of fruit that went to waste on the ground. Without a road to a market, where the Indians may enjoy the advantages of competition in selling and buying, it will not be possible to give effect to the policy of the Interior Department to make the Indians self-sustaining and independent of the Government, or to advance their condition much beyond what it is at present.

I am, sir, very respectfully, your obedient servant,

WM. E. DOUGHERTY,
Captain U. S. Army, Acting Agent.

Hon. COMMISSIONER INDIAN AFFAIRS,
Washington, D. C.

[First indorsement.]

HEADQUARTERS DEPARTMENT OF CALIFORNIA,
San Francisco, February 7, 1887.

Respectfully forwarded to the Adjutant-General of the Army.

Captain Dougherty acts in a double capacity. Of course the within petition and recommendation, which I regard as very timely, sensible, and right, belongs to his work as Indian agent, and I hope the Indian Department may be able to comply with the petition.

O. O. HOWARD,
Major-General, Commanding.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 45.

IRRIGATING DITCHES AND FLUMES FOR MISSION INDIANS, CALIFORNIA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation for irrigating ditches and flumes for the Mission Indians, California.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January* 5, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, a copy of a communication from the Secretary of the Interior of the 24th ultimo, submitting an estimate for an appropriation of $25,000 for irrigating ditches and flumes for the Mission Indians in California.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 24, 1887.

SIR: I have the honor to inclose herewith for presentation to Congress, in accordance with the provisions of section 2 of the act of July 7, 1884 (23 Stat., 254), copy of a letter of 23d instant from the Commissioner of Indian Affairs, submitting, with accompanying correspondence, the estimate of appropriation therein noted, in the sum of $25,000; said amount, or so much thereof as may be required, to be expended under the direction of the Secretary of the Interior in locating and constructing irrigating ditches and flumes on lands occupied by the Mission Indians in the State of California, which he desires may be inserted in the Indian appropriation bill for the ensuing fiscal year.

The subject has the approval of this Department.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 23, 1887.

SIR: I have the honor to invite your attention to the inclosed communication from C. C. Painter, dated the 5th day of October last, in which, at my request, he submits a statement of the condition of the Mission Indians in California, and the need of aid from the Government in locating and constructing irrigating ditches to enable them to open farms and cultivate the same as a means of support.

The Mission Indians number about 3,000 souls, and are located on twenty-one reserves, covering an area of 160,762 acres, or 251 square miles, set aside for their use and occupation by Executive orders, dated December 27, 1875; May 15, 1876; May 3, August 25, and September 29, 1877; January 17, 1880; March 2 and 9, 1881; June 27 and July 24, 1882; February 5 and June 19, 1883, and January 25 and March 22, 1886.

I concur in the views and recommendations of Mr. Painter as to the urgent need of aid from the Government to develop the water supply by irrigation through the several reservations, and submit herewith an estimate of appropriation in the sum of $25,000, with the recommendation that the same be submitted to Congress for its action and consideration as an amendment to the Indian appropriation bill for the next fiscal year.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

Proposed amendment to the bill making appropriation for the Indian service for the fiscal year ending June 30, 1889.

This amount, or so much thereof as may be necessary, to be expended in locating and constructing irrigating ditches and flumes on lands occupied by the Mission Indians in the State of California, under direction of the Secretary of the Interior, $25,000.

WASHINGTON CITY, *October* 5, 1887.

DEAR SIR: Referring to our conversation of the other day, and in compliance with your suggestion that I should put my statements in writing, I have the honor to say: Of the nearly 300,000 acres of land embraced within the twenty-one reservations set apart for the Mission Indians in southern California, the late agent, Mr. Ward, estimates that not more than 500 acres can be cultivated by them without irrigation, which, unaided, the Indians are not able to secure. A very small proportion of it can be irrigated or be made a basis of support even by the Government, most of it being absolute desert or inaccessible mountain top.

Of the 3,000 of these Indians, probably 500 are living on old grants, from which every effort is now making to dislodge them, with the chances largely in favor of success. If this is done, we will have 3,000 Indians to be located on 500 acres of land.

The only way in which relief can be afforded, unless more land is purchased for them or the Indians are removed to some other State, is by giving the necessary assistance in the development of water and construction of irrigating ditches.

If the Capitan Grande Reservation is cleared of intruders, as per orders issued by the President through your office (an order which was to have been carried out last spring with reference to several of these men, but which utterly fails of execution, and with reference to all others on the 1st of September last), there will be land enough for those who belong there, provided the San Diego Water Company is not allowed to interfere with their water. This company had a large force at work last summer, when I was there, building a flume across the reservation, a fact of which, I think, your office was not informed until after my visit.

The reservation near Banning, embracing some —— acres, is the only one which can be made available for a larger number of Indians than is now upon it. On this reservation some 53 squatters have come, to the exclusion of the Indians, excepting some 20 families, more or less, on the northeast corner, who have water and sufficient land for their support. The integrity of these reservations is the only hope of these Indians. I went over the ground with the agent, and we estimated that it was capable of giving a home to all the Indians who, without it, must be homeless. If these intruders are compelled to leave, and all the land set apart by Executive order for the Indians shall be put into their possession, there would be enough for some 175 or 200 families. But the expenditure of money is necessary for the development of water. Men who are acquainted with the country and the cost of such labor as this would require, assure me that it will cost about $75,000 to do the work, and that for this sum irrigated farms of 5 acres each could be secured for 150 men, while their dry farms could be allotted to them away from the irrigating ditches. This would make a compact village, if we add the lands now occupied and used by white intruders, of about 200 families.

This would settle the question as to the proper location for the agency buildings, and for a large boarding-school for all the mission Indians.

Whether the Banning Hotel is on or off the reservation is a matter of doubt, but whether on or off, if this plan should be carried out it would be of little value as a hotel, and would be suitable for a school. Doubtless arrangements could be made with the company by which it could be obtained for that purpose.

I wish to emphasize what I know from repeated visits to these Indians and their reservations, that this reservation furnishes the only key to the solution of their problem. It must be maintained in its integrity, else there is no land for them. This land must be irrigated as the condition of giving them a support. At the request of Mr. Dawes, who has also visited the reservation, I bring this to your attention, hoping that an appropriation of $75,000 may be asked for that purpose.

Yours, very respectfully,

C. C. PAINTER.

I concur.

M. WHITTLESEY.

Hon. J. D. C. ATKINS,
Commissioner of Indian Affairs.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 46.

OSAGE INDIAN AGENT.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation for increase of the salary of the Indian agent at the Osage Agency, Ind. T.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 5, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior of the 28th ultimo, inclosing copy of a letter of the Commissioner of Indian Affairs, in relation to the estimate for the salary of the Indian agent at the Osage Agency, Ind. T., on page 139 of the Book of Estimates for 1889, which it is desired shall be increased from $1,600 to $2,000 per annum.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, December 28, 1887.

SIR: I inclose herewith duplicate copies of a letter from the Commissioner of Indian Affairs, dated the 27th instant, stating that the salary of the agent for the Indians of the Osage Agency is $1,600, and that the increase submitted in the estimates for appropriation is only $200, being $200 less than originally intended, as shown by duplicate estimate on file in this Department, and, giving reasons for the increase, recommends that the attention of Congress be called to the matter.

Very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, D. C., December 27, 1887.

SIR: I have the honor to invite your attention to House Ex. Doc. No. 5, Fiftieth Congress, first session, page 139, containing estimates of appropriation required to pay the salary of the Indian agent for the next fiscal year at the Osage Agency, Ind. T.

This agent is allowed by law the sum of $1,600 as salary, and the increase submitted for appropriation is $200, being $200 less than originally intended, as shown by the duplicate estimate on file in the Department, the sum of $400 having been recommended as additional salary required to pay the agent at this agency.

Owing to the large amount of money disbursed at this agency annually, aggregating nearly $300,000, it is impossible to obtain the services of an agent at the salary fixed by law, the sureties on his bond being required to qualify for at least the sum of $150,000.

In view of this fact, I respectfully recommend that the attention of Congress be called to this matter through the honorable Secretary of the Treasury.

Very respectfully,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 47.

UNITED STATES CONSUL, IQUIQUE, PERU.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A letter from the Secretary of State, recommending that the United States consul at Iquique, Peru, be relieved from responsibility for the loss of Government funds by fire.

JANUARY 9, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 4, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of State of the 9th ultimo, inclosing copy of House Ex. Doc. No. 184, Forty-ninth Congress, second session, relative to the loss by fire on June 17, 1884, of $647.14 of Government funds at the United States consulate at Iquique, Peru, and renewing his recommendation therein contained for the relief from responsibility for said loss of the United States consul, J. W. Merriam.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, December 9, 1887.

SIR: I have the honor to call your attention to the inclosed executive document of the House of Representatives (No. 184, Forty-ninth Congress, second session), embodying previous correspondence recommending a bill to relieve Mr. J. W. Merriam, consul at Iquique, Peru, from responsibility for the loss of $647.14 of Government funds which were in his safe at the time of the burning of the consulate in 1884.

I renew my recommendation in this matter, and ask that it be again brought to the attention of Congress.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

The SECRETARY OF *THE TREASURY.*

[House Ex. Doc. No. 184, Forty-ninth Congress, second session.]

Letter from the Acting Secretary of the Treasury, transmitting a letter from the Secretary of State, in relation to the loss by fire of Government funds at Iquique, Peru, and renewing the recommendation for the relief of the United States consul from liability therefor.

FEBRUARY 22, 1887.—Referred to the Committee on Foreign Affairs and ordered to be printed.

TREASURY DEPARTMENT, *February* 19, 1887.

SIR: I have the honor to inclose herewith, for the consideration of Congress, copy of letter of the Secretary of State of the 16th instant, inclosing copy of House Ex. Doc. No. 177, Forty-eighth Congress, second session, in relation to the loss by fire on June 17, 1884, of $647.14 of Government funds at the United States consulate at Iquique, Peru, and renewing the recommendation of that Department therein contained, for the relief from responsibility for said loss of the United States consul, J. W. Merriam.

Respectfully, yours,

C. S. FAIRCHILD,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, February 16, 1887.

SIR: I have the honor to acknowledge the receipt of a letter from J. W. Merriam, consul at Iquique, Peru, referred by you to this Department for consideration on the 8th instant, in which letter Mr. Merriam calls attention to the bill introduced to relieve him from responsibility for the loss of $647.14 of Government funds which were in his safe at the time of the burning of the consulate in 1884, and asks that the same be pressed.

In reply I have the honor to say that the Department adheres to its recommendation for the passage of said bill and requests that the matter be brought to the attention of Congress again with that object.

I return the printed document accompanying Mr. Merriam's letter.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

Hon. DANIEL MANNING,
Secretary of the Treasury.

[House Ex. Doc. No. 177, Forty-eighth Congress, second session.]

TREASURY DEPARTMENT, *February* 2, 1885.

SIR: I have the honor to transmit herewith, for the consideration of Congress, a communication from the Secretary of State of the 28th ultimo, with inclosures, in relation to the burning of the archives and property of the consulate of the United States at Iquique, Peru, on the 17th of June last, and the total destruction of $647.14 of Government funds contained in the safe, and recommending an appropriation in that sum for the relief from responsibility for said loss of the United States consul, Mr. J. W. Merriam.

Very respectfully,

H. MCCULLOCH,
Secretary.

The Hon. SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, January 28, 1885.

SIR: I have the honor to send you inclosed copies of dispatches Nos. 234 and 238, from the consul of the United States at Iquique, Peru, reporting the total destruction by fire of the archives and property of the consulate of the United States at that place on the 17th of June last. The consul states that the contents of the safe in which he kept the Government funds were entirely destroyed by the heat, and sends his affidavit that the amount thus lost was $647.14. He asks that a recommendation be made to Congress for the passage of a bill to relieve him from responsibility for this loss.

Upon an examination of the facts of the case, I am of the opinion that it would be a hardship to hold Mr. Merriam responsible for the loss of the above funds, and I respectfully request you to present the matter to Congress, as provided by law, with my strong recommendation of a bill for his relief.

I have the honor to be, sir your obedient servant,

FRED'K T. FRELINGHUYSEN.

Hon. HUGH MCCULLOCH,
Secretary of the Treasury.

No. 234.] CONSULATE OF THE UNITED STATES,
Iquique, Peru, June 19, 1884.

SIR: I have the honor to report that at half past 2 o'clock of the morning of the 17th instant a fire broke out in the house adjoining the consulate, which caused the almost total loss of the archives and other property of the Government, as well as a complete loss of all my professional and general library and furniture.

No alarm was sounded until 3 o'clock, and then the fire had made such headway that when I arrived at the consulate, at 3.10, the building was enveloped in flames and the roof was falling in. I succeeding in opening the door, but the heat was so intense and the smoke so blinding that it was only possible to get out two of the seven boxes which were already packed and which were nearest the door.

My hands and face were burned, and the danger from falling timbers so great that all efforts to save anything more had to be abandoned. Milner's safe, which was claimed to be fire-resisting, was in the inner room, and so completely cut off from access to it that no effort could be made to open it and extract its contents. The result of the fire shows that the safe was not worthy of the name "fire-resisting," as its contents were completely carbonized and destroyed.

Among other things, the funds belonging to the United States Government, proceeding from the extra wages of seamen, all of which were paid in Chilian bank notes, were totally destroyed beyond recognition.

The safe was opened in the afternoon of the 18th in presence of the French vice-consul, the Austrian consul, and many other prominent citizens, some of whom sign this dispatch as witnesses of the destruction of the consulate and of the condition in which they found the contents of the safe on opening it.

With reference to the exact value of the bank notes destroyed, I can not state positively the amount, as my account-current book was in the inner room and was destroyed by the fire, and I can only say that the whole sum belonging to the Government was completely lost, including about $30 which I added to the amount in the safe a few days previous, according to instructions of the First Comptroller received during the present month. The loss of the funds, books, furniture, etc., of the consulate having been complete and unavoidable, in spite of precautions constantly taken to keep the archives ready to be removed at short notice, and owing to the impossibility of removing the contents of the safe, I have respectfully to request that you present a bill to Congress for relief to this consulate, exonerating me from all responsibility in the premises, and authorizing the Department of the Treasury to cancel my indebtedness to the United States Government.

I will here state that my own personal loss in books, furniture, pictures, and bank notes is not less than $1,500.

* * * * * * *

I have the honor to be, very respectfully, your obedient servant,

J. W. MERRIAM,
United States Consul.

Hon. WILLIAM HUNTER,
Second Assistant Secretary of State, Washington, D. C.

Sworn to before me.
French vice-consul,
[SEAL.]

É. DE LAPEYROUSE.

[Inclosure in dispatch of June 19, 1884.]

IQUIQUE, *June* 20, 1884.

We, the undersigned, residents of Iquique, do hereby certify to the correctness of the statements made in the dispatch of the United States consul of June 19, marked A, and that we were eye-witnesses of the opening of the safe referred to; that its contents were almost completely destroyed, all of the bank-notes having been car-

bonized beyond recognition. We also certify that on account of the rapid progress and intensity of the fire it was impossible either to open the safe or to remove it from the consulate.

[SEAL.] HERM. SCHULTZE.
E. REBELING.
FEOD. SCHEEL.
CARLOS LAFRENTZ.
[SEAL.] G. W. I. LESLIE,
Acting British Vice-Consul.
[SEAL.] E. DE LAPEYROUSE,
French Consul.

No. 238.] CONSULATE OF THE UNITED STATES,
Iquique, Peru, September 23, 1884.

SIR: I have the honor to acknowledge the receipt of copies of my dispatches Nos. 97 and 98, and of your dispatch No. 99, of August 12, together with an index of the dispatches sent from this consulate from its establishment to April 19, 1884.

In accordance with instructions in your No. 99, I shall draw for $200 for office furniture, supported by proper vouchers, to be included in my miscellaneous expense account.

Having received, since the fire of June 17, a statement of my account with the United States Government, I am now able to state the exact amount of Government funds lost, and herewith inclose a sworn affidavit in support of my statement, to which I respectfully suggest that there be added the affidavit of June 19, of myself and various witnesses, to the opening of the safe, with a view of obtaining from Congress a bill of relief.

Experience shows the imminence of dangers from fire in Iquique, and as the consulate is established at present in a second story, I propose to arrange a kind of fire-escape for lowering boxes of books and furniture at short notice in case of necessity. The cost, which will be trifling, I will include in my miscellaneous expense account.

I have the honor to be. very respectfully, your obedient servant,

J. W. MERRIAM,
United States Consul.

Hon. WILLIAM HUNTER,
Second Assistant Secretary of State, Washington, D. C.

[Inclosure in No. 238, September 23, 1884.]

IQUIQUE, PERU, *September* 23, 1884.

I, the undersigned, Joseph W. Merriam, consul of the United States for Iquique, Peru, do hereby declare, under oath, that in the fire of June 17, 1884, the archives of the consulate, together with the office furniture, shield, flag-staff, flag, and seal, and the sum of $647.14 were completely destroyed, notwithstanding that every possible effort was made to save the Government property and funds referred to.

In addition to this loss, my personal loss in bank-notes, private library, furniture, and clothing amounted to $1,500, as nearly as can be estimated, on which there was no insurance.

I respectfully call attention to the affidavits sworn to on the 19th day of June last by the Austrian consul, acting British vice-consul, and the following-named merchants of Iquique, viz, E. Rebeling, Feodoro Scheel, and Carlos Lafrentz, a copy of which was forwarded with my dispatch of that date; in consideration of which circumstances, I have the honor respectfully to request that a bill of relief be presented to Congress in my behalf, and that this consulate be elevated to the grade of those classed in Schedule B, with a salary of $2,500, as requested in my dispatch No. 185, of October 28, 1882.

[SEAL.] J. W. MERRIAM,
United States Consul.

Sworn to before me.
French vice-consul,
[SEAL.] E. DE LAPEYROUSE.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 48.

LIGHT AND FOG SIGNAL, STATE LEDGE, BOSTON HARBOR. LAND FOR LIGHT STATION, POINT PINOS, CAL.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Estimates from the Light-House Board of appropriations for light and fog signals at State Ledge, Boston Harbor, Massachusetts, and for the purchase of land at Pinos, Cal., Light Station.

JANUARY 9, 1888.—Referred to the Committee on Commerce and ordered to be printed

TREASURY DEPARTMENT,
January 4, 1888.

SIR: I have the honor to transmit herewith for the consideration of Congress copies of two communications of the Light-House Board of the 9th ultimo, submitting estimates of appropriations for the following objects: Light and fog signal at or near State Ledge, Boston Harbor, Massachusetts, $42,000; purchase of land at the Point Pinos, Cal., light station, $2,500.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, December 9, 1887.

SIR: The Light-House Board has the honor to state that a petition has been received at this office signed by two hundred and fifty persons, all of whom are directly interested in the safe navigation of Boston Harbor, Massachusetts, as agents of steamship companies, pilots, and masters or mates of vessels, asking that a light and fog signal be established on State Ledge, near the present turning buoy No. 8, in Boston Harbor.

The necessity for a light and fog signal at this point has long been recognized by the Board, but heretofore action has been postponed until the improvements in the channel of the harbor had been completed.

Although these improvements have not yet been fully completed, they are practically finished in the neighborhood of State Ledge, and the time has arrived when these aids to navigation may be safely established, the estimated cost thereof being $42,000.

This matter was considered by the Board at its session held on December 5, 1887, when it was ordered that the proper steps be taken to have made the appropriation required for the work.

The Board therefore recommends that Congress be asked by the Department to make the following appropriation, namely:

For establishing a light and fog signal at or near State Ledge, in the vicinity of buoy No. 8, in Boston Harbor, Massachusetts, $42,000.

Respectfully, yours,

S. C. ROWAN,
Vice-Admiral, U. S. N.,
Chairman.

The SECRETARY OF THE TREASURY.

TREASURY DEPARTMENT,
OFFICE OF THE LIGHT-HOUSE BOARD,
Washington, December 9, 1887.

SIR: The Light-House Board has the honor to state that the light-house reservation at Point Pinos, California, does not go to the sea in any direction, and that in the near future high buildings or electric lights may be erected between the present light-house and the point.

To guard against this possibility, the occurrence of which would render the Point Pinos light useless as an aid to navigation, the Board, at its session held on December 5, when the matter was fully considered, ordered that the proper steps be taken to have an appropriation made to acquire title to land between the light-house and the ocean, this land embracing between 50 and 60 acres, and the estimated cost thereof, including all the expense incident to the acquisition of title, being $2,500.

The Board therefore recommends that Congress be asked to make the following appropriation, namely:

For the purchase of land between the Point Pinos, California, light-house reservation and the ocean, extending to the extreme end of the point, $2,500.

Respectfully, yours,

S. C. ROWAN,
Vice-Admiral, U. S. N., Chairman.

The SECRETARY OF THE TREASURY.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 49.

PROTECTING WALL, NAVY-YARD, LEAGUE ISLAND, PENNSYLVANIA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A supplemental estimate from the Secretary of the Navy of an appropriation for dredging, for filling in, and for building a protection wall at the navy-yard, League Island, Pennsylvania.

JANUARY 9, 1888.—Referred to the Committee on Naval Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 4, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, a supplemental estimate submitted by the Acting Secretary of the Navy for an appropriation of $250,000 for dredging and filling in, and building a protection wall at the navy-yard, League Island, Pennsylvania.

Very respectfully,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

BUREAU OF YARDS AND DOCKS, NAVY DEPARTMENT,
Washington, December 2, 1887.

SIR: I have the honor to submit the inclosed special estimate of $250,000 for dredging and filling in, and building a protection wall at navy-yard, League Island, Pennsylvania, and beg that the same may be transmitted to the chairman of the House Committee on Appropriations, in order that it may receive consideration and be inserted in naval appropriation bill.

Very respectfully, your obedient servant,

D. B. HARMONY,
Chief of Bureau.

Hon. CHARLES S. FAIRCHILD,
Secretary of the Treasury, Washington, D. C.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1
by the Bureau of Yards and Docks, Navy Department.

Detailed objects of expenditure, and explanations.	Total am to be ap priated u each he appropri
Navy-yard, League Island, Pennsylvania:	
For dredging and filling in, and building protection wall (submitted)	$25

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 50.

CLAIM OF JOSHUA EVERHART.

LETTER

FROM

THE ACTING SECRETARY OF THE TREASURY,

IN RELATION

To the claim of Joshua Everhart, and recommending that so much of the act of March 3, 1877, as made an appropriation therefor be repealed.

JANUARY 10, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 9, 1888.

SIR: I have the honor to invite the attention of Congress to the fact that in the act of March 3, 1877, making appropriations for the payment of claims reported allowed by the Commissioners of Claims under the act of March 3, 1871, there was appropriated the sum of $725 to pay the claim of Joshua Everhart, of Virginia. (See 19 Stat., p. 535.)

Before payment of the claim it was found that the allowance had been procured through false testimony, whereupon payment thereof was suspended, but the appropriation still remains on the statutes.

I have therefore to recommend that so much of the act approved March 3, 1877, entitled "An act making appropriations for the payment of claims reported allowed by the Commissioners of Claims under the act of Congress of March 3, 1871," as appropriates the sum of $725 to Joshua Everhart, be repealed.

Respectfully yours,

HUGH S. THOMPSON,
Acting Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 51.

RELIEF OF JOHN McNAUGHTON.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING,

With inclosures, a letter from the Second Auditor in relation to the "act for relief of John McNaughton."

JANUARY 9, 1888.—Referred to the Committee on Military Affairs and ordered to be printed.

TREASURY DEPARTMENT, *January* 4, 1888.

SIR: I have the honor to inclose herewith a certified copy of an act of Congress approved January 17, 1887, entitled "An act for the relief of John McNaughton," together with copy of a communication from the Second Auditor of the Treasury, of August 27, 1887, from which it appears that the said John McNaughton received the pay and allowances granted by the act referred to in a payment made to him April 4, 1864, by Paymaster R. P. Dodge, U. S. Army, for the time specified in the act to February 5, 1864, and for a further period to March 28, 1864.

The attention of Congress is respectfully invited to the matter, with a view to the repeal of the act in question, or to such action as Congress shall deem proper.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
SECOND AUDITOR'S OFFICE,
Washington, D. C., August 27, 1887.

SIR: I have the honor to transmit herewith a certified copy of "An act for the relief of John McNaughton," approved January 17, 1887. This act grants to the person named therein the pay and allowances of a first sergeant of Company G, First Regiment of West Virginia Cavalry Volunteers, from August 16, 1863, to February 5, 1864.

The records of this office, however, show that the said John McNaughton had already received the pay and allowances of the grade in

the company and regiment and for the time specified in said act, and up to March 28, 1864, in a payment made to him April 4, 1864, by Paymaster R. P. Dodge, U. S. Army, under a decision of the Second Comptroller, dated April 2, 1864.

Claimant's attorney has been informed of the fact of prior payment, and is not pressing the claim under the act of relief.

As the act in question was undoubtedly passed under a misapprehension of the facts, or without knowledge of all the facts, in the case, I have the honor to recommend that the attention of Congress be called to this matter, with a view to such further legislation as the facts seem to suggest.

Very respectfully,

WM. A. DAY,
Auditor.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

[PRIVATE—No. 11.]

An act for the relief of John McNaughton.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and is hereby, authorized and directed to pay, out of any moneys in the Treasury not otherwise appropriated, to John McNaughton, of Gervais, Scioto County, Ohio, the pay and allowances of a first sergeant of Company G, First Regiment of West Virginia Cavalry Volunteers, from the sixteenth day of August, anno Domini eighteen hundred and sixty-three, to the fifth day of February, anno Domini eighteen hundred and sixty-four.

Approved, January 17, 1887.

A true copy.

SEVELLON A. BROWN,
Chief Clerk.

DEPARTMENT OF STATE,
February 28, 1887.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 52.

COMMERCE OF SAINT MARY'S FALLS CANAL.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, a report in regard to the commerce passing the Saint Mary's Falls Canal.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 29, 1887.

The Secretary of War has the honor to transmit to the House of Representatives, for the information of the Committee on Rivers and Harbors, a letter of the 22d instant from the Chief of Engineers, together with a letter from Lieut. Col. O. M. Poe, Corps of Engineers, in regard to the commerce passing the Saint Mary's Falls Canal, accompanied with comparative statements, etc.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 22, 1887.

SIR: I have the honor to submit the inclosed copy of a report to this office from Lieut. Col. O. M. Poe, Corps of Engineers, dated the 17th instant, in reference to the commerce passing the Saint Mary's Falls Canal during the season of 1887, with comparative statements, etc.; and, in view of the importance and magnitude of the interests concerned, to request that it be forwarded to the Speaker of the House of Representatives for the information of the Committee on Rivers and Harbors.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WILLIAM C. ENDICOTT,
Secretary of War.

LETTER OF LIEUT. COL. O. M. POE, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 17, 1887.

SIR: I beg leave to invite special attention to the report of this date upon the commerce of Saint Mary's Falls Canal, and, in view of the importance and magnitude of the interests involved, respectfully suggest the propriety of transmitting it to Congress, for use in connection with the question of an appropriation for continuing the enlargement of Saint Mary's Falls Canal.

I am, sir, very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.,

REPORT OF LIEUT. COL. O. M. POE, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 17, 1887.

SIR: I have the honor to submit the following report relating to the commerce passing Saint Mary's Falls Canal, during the season of 1887, just closed, including a comparative statement of the same for the seasons of 1886 and 1887, and an estimate of its value for 1887, based upon the unit prices heretofore used in similar estimates, as affording a better basis for comparing the business than prices amended to conform to those actually prevailing.

The canal was open to navigation two hundred and sixteen days during the season of 1887, the first vessel having passed May 1 and the last one December 2, thus making the season eight days shorter than that of 1886.

It will be observed that the number of passages of all classes exceeds that of preceding season 1,931, or 26 per cent.

The increase in freight tonnage for 1887 was 966,890 tons, or 21 per cent., as against an increase in the registered tonnage of 678,201 tons, or 16 per cent.

The passenger traffic shows an increase of 21 per cent., for which there is no apparent reason other than a legitimate increase in tourist and commercial travel.

All the items enumerated in the statement show a healthy and decided increase, save flour, manufactured and pig iron, copper and silver ore. The decrease in the flour shipments, amounting to 11 per cent., is undoubtedly due to the scarcity of water for the great mills at Minneapolis and consequent reduction in the output at that point. This decrease in the amount of flour is much more than compensated for, however, by the increase of 22 per cent. in the item of wheat. As the item "manufactured and pig iron" includes iron and steel rails transported to the new railroads of the Northwest, the completion of which reduced the demand for this product, the falling off is easily accounted for.

The decrease in the item of copper and silver ore is due to the increased facilities for transporting these valuable commodities by rail.

Beginning with August, 1887, a memorandum record was kept of the quantity of wool and hides passing the canal for the remaining four

months to the close of the season. This record shows that these items amounted to $1,791\frac{1620}{2000}$ tons of wool, and $225\frac{620}{2000}$ tons, respectively.

The item "unclassified freight" amounts to but 6 per cent. of the total freight tonnage.

The number of vessel passages during the three busiest months of the season were as follows:

For month of—	Number.	Average per day.
June	1,685	56.17
July	1,665	53.7
August	1,780	57.42
Total	5,130	.....

An average of 55.76 per day for ninety-two days.

The corresponding statistics for 1886 were as follows, viz:

For month of—	Number.	Average per day.
June	1,196	39.87
July	1,285	41.77
August	1,250	40.32
Total	3,741	.....

Or an average of 40.66 per day for ninety-two days.

The rate of increase during 1887 was, therefore, 37¼ per cent.

Should the same *rate* of increase be continued for *two* more years we will have reached our estimated ultimate capacity of the present lock, which is 96 vessels per day, or one vessel every fifteen minutes during the twenty-four hours.

On one day in the month of June 84 vessels were passed through the canal. On the 3d June 49 vessels passed the canal, carrying 49,258 tons of freight, or an average of a little more than 1,000 tons per vessel. Over 50,000 tons were passed on one day, but in a greater number of vessels.

Very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

Comparative statement of the amount and value of the commerce through St. Mary's Falls Canal, Michigan, for the calendar years 1886 *and* 1887.

Items.	Quantity.		Increase.		Decrease.		Price per unit.
	1886.	1887.	Amount.	Per cent.	Amount.	Per cent.	
Vessels.....number..	7,424	9,355	1,931	26	.....	.....	.....
Lockages.....do....	3,593	4,165	572	16	.....	.....	.....
Tonnage, registered.....tons..	4,219,397	4,897,598	678,201	16	.....	.....	.....
Tonnage, freight.....do....	4,527,759	5,494,649	966,890	21	.....	.....	.....
Passengers.....number..	27,088	32,668	5,580	21	.....	.....	.....
Coal.....net tons..	1,009,999	1,352,987	342,988	34	.....	.....	$3.50
Flour.....barrels..	1,759,365	1,572,735	.....	.....	186,630	11	5.00
Grain.....bushels..	19,706,867	23,871,686	4,164,819	21	.....	.....	.90
Manufactured iron...net tons..	115,208	74,919	.....	.....	40,289	35	.50
Pig-iron.....do....					.....	.....	.17
Salt.....barrels..	158,677	204,908	46,231	29	.....	.....	1.00
Copper.....net tons..	38,627	34,886	.....	.....	3,741	10	200.00
Iron ore.....do..	2,087,809	2,497,713	409,904	20	.....	.....	3.50
Lumber.....ft. B. M..	138,688,000	165,226,000	26,538,000	19	.....	.....	.18
Silver ore.....net tons..	2,009	350	.....	.....	1,659	83	153.79
Building stone.....do....	9,449	13,401	3,952	42	.....	.....	10.00
Unclassified freight.....do....	230,726	344,586	113,860	49	.....	.....	60.00

Items.	Total valuation.	
	1886.	1887.
Coal.....net tons..	$3,534,996.00	$4,735,454.50
Flour.....barrels..	8,796,825.00	7,863,675.00
Grain.....bushels..	19,312,720.84	23,394,242.28
Manufactured iron.....net tons..	5,366,950.00	3,035,750.00
Pig-iron.....do....	133,773.00	241,468.00
Salt.....barrels..	158,677.00	204,908.00
Copper.....net tons..	7,725,400.00	6,977,200.00
Iron ore.....do....	7,307,331.50	8,741,995.50
Lumber.....ft. B. M..	2,496,384.00	2,974,068.00
Silver ore.....net tons..	308,964.11	53,826.50
Building stone.....do..	94,490.00	134,010.00
Unclassified freight.....do..	13,843,566.00	20,675,160.00
Total.....	69,080,071.95	79,031,757.78

Canal was opened to navigation 224 days in 1886.
Canal was opened to navigation 216 days in 1887.
Valuation based on estimate of 1885.
Valuation for 1885, $53,413,472.13.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 53.

TITLE TO HARBOR AT PORT CLINTON, OHIO.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

With a letter from the Chief of Engineers, a report in reference to the acquiring by the United States the title to land adjoining a pier built for the improvement of the harbor at Port Clinton, Ohio.

JANUARY 9 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 3, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter, dated the 22d ultimo, from the Chief of Engineers, together with a copy of a report of Maj. L. C. Overman, Corps of Engineers, made in compliance with the provisions of the river and harbor act of August 5, 1886, in reference to acquiring the title to the land adjoining the inner end of the west pier built by the United States for the improvement of the harbor at Port Clinton, Ohio.

Major Overman states that the sum of $1,200 is a reasonable price for the United States to pay for the necessary portion of the sand-beach adjoining the inner end of the west revetment at Port Clinton Harbor, and his views are concurred in by the Chief of Engineers and by this Department.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 22, 1887.

SIR: I have the honor to submit the inclosed copy of a report to this office from Maj. L. C. Overman, Corps of Engineers, dated December 20, 1887, made to comply with the requirements of "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors and for other purposes," approved

August 5, 1886, in reference to "acquiring the title to the land adjoining the inner end of the west pier built by the United States for the improvement of the harbor at Port Clinton, Ohio," etc., contained on page 5 of the act, of which a copy is herewith.

Major Overman's views are concurred in by this office, and, if approved by the War Department, it is recommended that his report be transmitted to the Speaker of the House of Representatives for the information of that body.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig.-Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

REPORT OF MAJ. L. COOPER OVERMAN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cleveland, Ohio, December 20, 1887.

GENERAL: The act making appropriations for certain public works on rivers and harbors, approved August 5, 1886, under item for Port Clinton Harbor, Ohio, reads as follows:

For the purpose of acquiring the title to the land adjoining the inner end of the west pier built by the United States for the improvement of the harbor at Port Clinton, Ohio, the Secretary of War shall negotiate with the owner or owners of the land for the purchase thereof at a reasonable price, to be approved by Congress; and if an agreement as to price can not be made with the owner, then the value of the same shall be ascertained in the mode provided by the laws of Ohio for the condemnation of lands for public uses in that State, the result of said proceedings of condemnation, if taken, to be reported to the next Congress for its approval.

In accordance with the above I have had considerable correspondence and two or more personal interviews with the owner of the land, and would respectfully report as follows:

Under the special circumstances of the case I recommend that the sum of $1,200 is a "a reasonable price" for the United States to pay for the necessary portion of the sand-beach adjoining the inner end of the west revetment at Port Clinton Harbor, Ohio. The portion deemed necessary, and for which the sum of $1,200 is deemed reasonable, is about 481 linear feet in length, measured along the lake edge from the United States revetment, thence along a line about at right angle to the shore line to the *river*-shore line, and thence along the river edge about 481 linear feet (more or less) to the revetment.

The owner of the land in question, Mr. Charles Roose, of Oak Harbor, Ohio, has agreed to accept the said sum of $1,200 for the designated portion of the beach.

Very respectfully, your obedient servant,

L. COOPER OVERMAN,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

[Public—No. 189.]

An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the following sums of money be, and are hereby, appropriated, to be paid out of any money in the Treasury not otherwise appropriated, and to be ex-

pended under the direction of the Secretary of War, for the construction, completion, repair, and preservation of the public works herein named:

* * * * * * *

For the purpose of acquiring the title to the land adjoining the inner end of the west pier built by the United States for the improvement of the harbor at Port Clinton, Ohio, the Secretary of War shall negotiate with the owner or owners of the land for the purchase thereof at a reasonable price, to be approved by Congress; and if an agreement as to price cannot be made with the owner, then the value of the same shall be ascertained in the mode provided by the laws of Ohio for the condemnation of lands for public uses in that State, the result of said proceedings of condemnation, if taken, to be reported to the next Congress for its approval.

* * * * * * *

Approved, August 5, 1886.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 54.

BALANCES ON HAND FOR IMPROVEMENT OF RIVERS AND HARBORS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, a tabulated statement of balances on hand for the improvement of rivers and harbors, November 1, 1887.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 3, 1888.

The Secretary of War has the honor to transmit to the House of Representatives, in compliance with the requirements of the river and harbor act of August 5, 1886, a letter of the Chief of Engineers, dated the 23d ultimo, together with a tabulated statement of the balances on hand for river and harbor works November 1, 1887.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 23, 1887.

SIR: To comply with so much of section 4 of the river and harbor act approved August 5, 1886, as relates to "balances of money on hand up to November 1," I have the honor to submit the accompanying tabulated statement of balances on hand for river and harbor works November 1, 1887.

In regard to the several balances, it may be proper to state that in most cases where no special reason is assigned in the column of remarks for retaining them, they are held in reserve for contingencies likely to arise before additional funds can be made available, or are too small in amount to make it advisable to expend them.

The "detailed statements of the work done, contracts made, the expenditures thereunder or otherwise, * * * and the effect of such work," required by the same section, are given in the Annual Report of the Chief of Engineers for the fiscal year ending June 30, 1887, submitted 22d of October last.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WILLIAM C. ENDICOTT,
Secretary of War.

Balances on hand for river and harbor works, November 1, 1887.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Lubec Channel, Me	$112.88		$112.88
Moos-a-bec Bar, Me	9,471.10	$2,540.87	6,930.23
Narragaugus River, Me	2,745.51	2,481.17	264.34
Penobscot River, Me	14,292.18	13,127.68	1,164.50
Rockland Harbor, Me	10,043.81	9,136.31	907.50
Portland Harbor, Me	17,731.47	17,406.77	324.70
Back Cove, channel in, Portland, Me	21,411.89	20,404.39	1,007.50
Saco River, Me., breakwater at mouth of	943.96	607.55	336.41
Saco River, Me	11,445.92	11,094.32	351.60
York Harbor, Me	2,530.00		2,530.00
Portsmouth Harbor, N. H	6,560.83	5,496.33	1,064.50
Cocheco River, N. H	518.89		518.89
Little Harbor, N. H., harbor of refuge at	385.69		385.69
Kennebunk River, Me	336.34		336.34
Belfast Harbor, Me	2,806.80		2,806.80
Lamprey River, Me	19.42		19.42
Newburyport Harbor, Mass	288.92	6.61	282.31
Merrimac River, Mass	290.04		290.04
Ipswich River, Mass	242.14		242.14
Sandy Bay, Cape Ann, Mass., harbor of refuge	58,596.00	58,166.00	430.00
Gloucester Harbor, Mass	2,383.33	2,198.70	184.63
Lynn Harbor, Mass	558.97		558.97
Boston Harbor, Mass	40,236.83	12,141.85	28,094.98
Hingham Harbor, Mass	22.74		22.74
Scituate Harbor, Mass m	474.72		474.72
Plymouth Harbor, Mass	566.51		566.51
Provincetown Harbor, Mass	294.10		294.10
Hyannis Harbor, Mass	6,266.26	6,229.88	36.38
Nantucket Harbor, Mass	7,588.09	7,533.86	54.23
Wood's Holl, Mass., harbor of refuge	37.70		37.70
Wareham Harbor, Mass	10,484.66	10,129.66	355.00
Westport Harbor, Mass	8.37	5.00	3.37
Taunton River, Mass	3,513.26	808.60	2,704.66
Warren River, R. I	2,744.27	1,272.00	1,472.27
Pawtucket River, R. I	2,290.74		2,290.74
Providence River and Narragansett Bay, R. I	7,646.01	4,321.28	3,324.73
Green Jacket Shoal, removing, Providence River, R. I	14,017.61	14,017.61	
Newport Harbor, R. I	98.59		98.59
Block Island Harbor, R. I	16,406.81	16,320.88	85.93
Little Narragansett Bay, R. I	143.04		143.04
Stonington Harbor, Conn	3,571.28	1,282.55	2,288.73
Pawcatuck River, R. I	6,387.15	6,140.63	246.52
Thames River, Conn	14,342.61	5,024.53	9,318.08
New London Harbor, Conn	204.33		204.33
Connecticut River, between Hartford and Holyoke	9,171.90		9,171.90
Connecticut River, below Hartford	14,687.43		14,687.43
Clinton Harbor, Conn	252.73		252.73
New Haven Harbor, Conn	7,123.95	4,286.96	2,836.99
New Haven Harbor, Conn., breakwater at	52,029.66	28,748.47	23,281.19
Milford Harbor, Conn	241.02		241.02
Housatonic River, Conn	6,857.29	4,444.00	2,413.29
Bridgeport Harbor, Conn	2,476.94		2,476.94
Black Rock Harbor, Conn	2,271.49	1,131.19	1,140.30
Southport Harbor, Conn	79.60		79.60

Balances on hand for river and harbor works, November 1, 1887—Continued.

Locality.	Balances on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Norwalk Harbor, Conn	$505.04		$505.04
Stamford Harbor, Conn	4,016.90	$1,702.82	2,314.08
Port Chester Harbor, N. Y	24.77		24.77
Mamaroneck Harbor, N. Y	220.55		220.55
Echo Harbor, New Rochelle, N. Y	3,056.87		3,056.87
New Rochelle Harbor, N. Y	14,674.81	406.86	14,267.95
East Chester Creek, N. Y	9,318.17		9,318.17
Greenport Harbor, N. Y	2,220.95	1,779.85	441.10
Port Jefferson Harbor, N. Y	374.76		374.76
Flushing Bay, N. Y	1,313.55		1,313.55
Hudson River, N. Y	36,864.71	1,000.00	35,864.71
Saugerties Harbor, N. Y	16,925.48	13,172.60	3,752.88
Roundout Harbor, N. Y	2,556.86	2,430.00	126.86
Harlem Harbor, N. Y	392,588.24	13.14	392,575.10
East River and Hell Gate, N. Y., removing obstructions in	47,361.07	634.03	46,727.04
Newtown Creek, N. Y	1,736.10		1,736.10
Buttermilk Channel, N. Y	6,544.91		6,544.91
Gowanus Bay, N. Y., channel in	64.31		64.31
New York Harbor, N. Y	732,880.50	628,824.05	104,056.45
Sheepshead Bay, N. Y	5,264.68		5,264.68
Canarsie Bay, N. Y	9,936.75		9,936.75
Sumpawanus Inlet, N. Y	81.88		81.88
Staten Island and New Jersey, N. Y. and N. J., channel between	1,281.40		1,281.40
Raritan Bay, N. J	34,977.99	33,635.41	1,342.58
Passaic River, N. J	6,323.08	49.89	6,273.19
Elizabeth River, N. J	289.26		289.26
Rahway River, N. J	81.87	3.20	78.67
Raritan River, N. J	21,841.76	500.71	21,341.05
South River, N. J	4,919.33	810.00	4,109.33
Keyport Harbor, N. J	454.49		454.49
Shrewsbury River, N. J	6,667.39	5,192.54	1,474.85
Manasquan River, N. J	1,000.00		1,000.00
Delaware River, Pa. and N. J	104,227.93	18,877.00	85,350.93
Frankfort Creek, Pa	264.50		264.50
Schuylkill River, Pa	230.87		230.87
Marcus Hook, Pa., ice-harbor at	80.71		80.71
Delaware Bay, Del., ice-harbor at head of	17,262.47		17,262.47
Delaware Bay, near Lewes, Del., construction of iron pier in	124.94		124.94
Delaware Breakwater Harbor, Del	2,507.10	86.25	2,420.85
Rancocas River, N. J	100.09		100.09
Woodbury Creek, N. J	4,549.69		4,549.69
Mantua Creek, N. J	3,000.00		3,000.00
Raccoon River, N. J	2,242.77		2,242.77
Salem River, N. J	1,490.66		1,490.66
Atlantic City Harbor, N. J., survey of	2,513.32	312.00	2,201.32
Delaware Breakwater, removing obstructions from harbor at	2,290.60		2,290.60
Maurice River, N. J	67.94	35.00	32.94
Wilmington Harbor, Del	3,606.51		3,606.51
New Castle, Del., ice-harbor at	9.83		9.83
Saint Jones' River, Del	354.40	43.75	310.65
Inland water-way, from Chincoteague Bay, Va., to Delaware Bay, at or near Lewes, Del	18,012.79		18,012.79
Chester River, at Kent Island Narrows, Md	2,958.54		2,958.54
Choptank River, Md	7,836.50	7,778.49	58.01
Nanticoke River, Del	6,963.52	6,933.42	30.10
Wicomico River, Md	1,372.80		1,372.80
Upper thoroughfare between Dells Island and the mainland	4,669.91		4,669.91
Pocomoke River, Md	7,991.64	2,426.70	5,564.94
Baltimore Harbor, Md	9,637.11	175.00	9,462.11
Annapolis Harbor, Md	1,524.58		1,524.58
James River, Va	46,486.95	43,048.35	3,438.60
Great Kanawha River, W. Va	57,832.85	54,702.04	3,130.81
Elk River, W. Va	1,500.00		1,500.00
New River, Va. and W. Va	10,147.29		10,147.29
Norfolk Harbor, Va	109,650.43	100.00	*109,550.43
Archer's Hope River, Va	20.63	20.63	
Appomattox River, Va	323.76	72.17	251.59
North Landing River, Va. and N. C	3,629.69		3,629.69
Currituck Sound, Coanjok Bay, and North River Bar, N. C	9,622.52	9,596.72	25.80
Nottoway River, Va	246.16		246.16

* Held to await further action of Congress.

Balances on hand for river and harbor works, November 1, 1887—Continued.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount able No ber 1
Meherrin River, N. C	$415.47		[illegible]
Edenton Bay, N. C	2,447.41		2,
Delaware and Chesapeake bays, surveys to connect	2,803.98		2,
Potomac River in vicinity of Washington, D. C	164,061.71	$138,232.94	25,
Shenandoah River, W. Va	16,083.40		*16,
Breton Bay Harbor, Md	992.37		
Saint Jerome's Creek, Md., harbor at entrance of	1,770.00		1,
Rappahannock River, Va	10,463.54	8,864.78	1,
Totusky River, Va	400.82		
Mattaponi River, Va	2,442.89	725.13	1,
Pamunky River, Va	2,353.12		2,
York River, Va	3,656.28		3,
Staunton River, Va., between Randolph and Brook Neal	1,198.35	542.17	
Staunton River, Va., between the mouth of Big River and the Midland Railroad crossing	1,169.62	373.75	
Dan River, Va. and N. C	6,653.50	1,637.32	5,
Roanoke River, N. C	10,560.06	1,881.27	8,
Pamlico and Tar Rivers, N. C	941.73	100.33	
Contentnea Creek, N. C	4,345.82	642.76	3,
Trent River, N. C	3,351.45	104.04	3,
Neuse River, N. C	9,827.22	3,137.69	6,
Water-way between New Berne and Beaufort, N. C	15,655.11	15,041.78	
Beaufort Harbor, N. C	3,263.61	1,149.84	2,
Water-way between Beaufort Harbor and New River, N. C	9,412.61	8,075.00	1,
New River, N. C	9,962.96	8,352.02	1,
Black River, N. C	2,836.02	426.68	2,
Cape Fear River, N. C	64,986.33	23,126.11	41,
Yadkin River, N. C	6,000.76	771.01	5,
Waccamaw River, S. C	2,164.59	528.77	1,
Great Peedee River, S. C	7,977.18	179.09	7,
Georgetown Harbor, S. C	282.00		
Winyaw Bay, S. C	16,008.50	90.00	15,
Santee River, S. C	5,571.48	44.00	†5,
Wateree River, S. C	2,162.48	243.35	1,
Congaree River, S. C	1,571.08	299.11	1,
Charleston Harbor, S. C	66,822.73	59,822.73	7,
Wappoo Cut, S. C	5,000.37		5,
Ashley River, S. C	1,031.54		1,
Edisto River, S. C	169.15	6.00	
Salkahatchie River, S. C	361.34	6.00	
Savannah Harbor, Ga	3,349.32	137.00	3,
Savannah River, Ga	995.94		
St. Augustine Creek (Thunderbolt River), Ga	3,417.66		3,
Romerly Marsh, Ga	287.20		
Altamaha River (including Doboy Bar), Ga	15,009.98	3,685.11	11
Brunswick Harbor, Ga	86.60		
Cumberland Sound, Ga. and Fla	38,956.51	35,956.51	3
Inside passage between Fernandina and St. John's River, Fla	4,434.45		4
St. John's River, Fla., channel at mouth of	70,287.75	50,534.47	19
Volusia Bar, Fla	674.45		
Upper St. John's River, Fla	4,971.72		4
Caloosahatchee River, Fla	554.25		
Pease River, Fla	965.59	105.83	
Manatee River, Fla	2,399.34		2
Tampa Bay, Fla	1,509.62		1
Withlacoochee River, Fla	138.77		
Cedar Keys Harbor, Fla	6,582.64	6,246.40	
Suwanee River, Fla	1,062.36	271.53	
Apalachicola River, Fla	687.58		
Apalachicola Bay, Fla	257.74	30.30	
La Grange Bayou, Fla	2,000.00		[illegible]
Pensacola Harbor, Fla	10,126.09	713.64	[illegible]
Choctawhatchee River, Fla. and Ala	4,381.96	583.16	[illegible]
Escambia and Conecuh Rivers, Fla. and Ala	8,476.02	1,959.85	[illegible]
Oconee River, Ga	7,126.07	4,229.67	[illegible]
Ocmulgee River, Ga	6,926.30	4,350.00	[illegible]
Oostenaula and Coosawattee Rivers, Ga	1,143.71		[illegible]
Flint River, Ga	10,127.68	3,398.44	[illegible]
Coosa River, Ga. and Ala	18,006.05	9,609.67	[illegible]
Chattahoochee River, Ga. and Ala	14,627.20	4,814.54	[illegible]
Tallapoosa River, Ala	3,778.56	601.73	[illegible]

* Awaiting action of Congress.

† $5,000 reserved for floodgate, as required by river and harbor act, August 5, 1886.

Balances on hand for river and harbor works, November 1, 1887—Continued.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Cahaba River, Ala	$7,801.85		*$7,801.85
Alabama River, Ala	8,815.68	$4,002.73	4,812.95
Mobile Harbor, Ala	599.77		599.77
Black Warrior River, Ala	101,138.58		†101,138.58
Warrior and Tombigbee Rivers, Ala. and Miss	20,443.64	20,184.64	259.00
Noxubee River, Miss	3,589.28	540.50	3,048.78
Pascagoula River, Miss	23,146.73	23,043.53	103.20
Biloxi Bay, Miss	16,277.09	16,203.99	73.10
Pearl River, Miss	3,684.46	1,223.30	2,461.16
South Pass, Mississippi River, examinations and surveys at	4.41		4.41
Mississippi River, survey of	6,547.55		6,547.55
Tchefuncte River, La	247.13		247.13
Tickfaw River, La	250.04		250.04
Amite River, La	333.33		333.33
Bayou La Fourche, La	79.61		79.61
Bayou Terre Bonne, La	1,351.59		1,351.59
Bayou Black, La	319.31		319.31
Bayou Teche, La	582.08		582.08
Connecting Bayou Teche with Grand Lake at Charenton, La	22,100.05		22,100.05
Bayou Courtableau, La	727.32		727.32
Calcasieu River and Pass, La	16,818.85	14,314.43	2,504.42
Bayou Pierre, Miss	430.80		430.80
Sabine River, La. and Tex	4,546.56		4,546.56
Neches River, La	11,667.84		11,667.84
Sabine Pass, Tex	3,941.56		3,941.56
Galveston Harbor, Tex	254,751.58	240,817.70	13,933.88
Galveston Bay, Tex., ship-channel in	151,385.45	140,010.00	11,375.45
Buffalo Bayou, Tex	13,020.80	11,110.08	1,910.72
Brazos River, Tex., mouth of	17,856.67	10.00	17,846.67
Pass Cavallo, Tex	36,061.78	5.00	36,056.78
Aransas Pass and Bay, Tex	96,507.48	88,015.00	8,492.48
Brazos Santiago Harbor, Tex	35,115.89	5.00	35,110.89
Protection of river banks at Fort Brown, Tex	1,000.00		1,000.00
Red River, La. and Ark	7,036.10	18.50	7,017.60
Cypress Bayou, Tex. and La	5,053.00		5,053.00
Bayou D'Arbonne, La	18.46		18.46
Bayou Bartholomew, La. and Ark	128.94		128.94
Bayou Bœuf, La	1,842.87	1,842.87	
Tensas River, La	9.92		9.92
Big Black River, Miss	5,000.00		*5,000.00
Yazoo River, Miss	1,643.14		1,643.14
Tchula Lake, Miss	519.18		519.18
Tallahatchee River, Miss	114.74		114.74
Steel's Bayou, Miss	590.78		590.78
Big Sunflower River, Miss	20.53		20.53
Gauging the water of Lower Mississippi and its tributaries	499.84	87.50	412.34
Red River above Fulton, Ark	1,052.47	140.80	911.67
Little Red River, Ark	2,600.00		2,600.00
Arkansas River, Ark. and Kans., removing obstructions in	1,758.05	568.83	1,189.22
Arkansas River, Ark	33,144.49	4,601.11	28,543.38
Petit Jean River, Ark	76.40	27.00	49.40
White River, Ark	5,616.71	1,051.78	4,564.93
Black River, Ark. and Mo	606.89		606.89
St. Francis River, Ark. and Mo	342.05	35.00	307.05
White River above Buffalo Shoals, Ark	.60		.60
Saline River, Ark	.55		.55
Mississippi River, removing obstructions in	9,019.48	12.25	9,007.23
Missouri River, removing obstructions in	4,534.78		4,534.78
Mississippi River, between mouth of Ohio and Illinois Rivers, Ill. and Mo	195,542.53	5,584.57	189,957.96
Gasconade River, Mo	1,844.93	562.72	1,282.21
Osage River, Mo. and Kans	5,592.96	10.00	5,582.96
Missouri River from Sioux City, Iowa, to Fort Benton, Mont	17,733.90	15,256.52	2,477.38
Yellowstone River, Mont. and Dak	15,000.00	453.07	14,546.93
Survey of Missouri River above Missouri River Falls, Fort Benton, Mont	15,000.00		15,000.00
Mississippi River from Des Moines Rapids to mouth of Illinois River, Ill. and Mo	14,904.16	10,323.48	4,580.68

* Reserved pending compliance with proviso of river and harbor act of August 5, 1886.
† Awaiting action of Congress granting authority to obtain the necessary land.

Balances on hand for river and harbor works, November 1, 1887—Continued.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Upper Mississippi River	$2,363.44		$2,363.44
Mississippi River from Saint Paul to Des Moines Rapids, Minn., Iowa, Mo., Ill., and Wis	156,763.98	$52,187.20	104,576.78
Des Moines Rapids, Mississippi River, Iowa and Ill	27,162.78	939.57	*26,223.21
Dry dock at Des Moines Rapids Canal, Mississippi River	6,878.91	4,484.14	2,394.77
Ice-harbor at Dubuque, Iowa	4,503.99		*4,503.99
Harbor of refuge, Lake Pepin, at Lake City, Minn	3,777.07	2,716.17	1,060.90
At Stockholm, Wis	6,130.05		6,130.05
Reservoirs at headwaters of Mississippi River	34,178.11	1,600.00	32,578.11
Chippewa River, Wis	5,112.54	175.43	4,937.11
Chippewa River at Yellow Banks, Wis	218.00		218.00
Saint Croix River, Wis. and Minn	418.50	20.82	397.68
Red River of the North, Minn. and Dak	14,269.20		14,269.20
St. Anthony's Falls, Minn	86.83		86.83
Mississippi River above Falls of St. Anthony, Minn	3.67		3.67
Minnesota River, Minn	42.00		42.00
Tennessee River above Chattanooga, Tenn	4,047.94	1,986.76	2,061.18
Tennessee River below Chattanooga, Tenn., Ala., and Ky	39,499.12	23,595.62	15,903.50
French Broad River, Tenn	424.18	424.18	
Clinch River, Tenn	1,659.66	832.02	827.64
Cumberland River below Nashville, Tenn	7,477.37	3,768.97	3,708.40
Cumberland River above Nashville, Tenn	76,581.49	1,161.16	†75,420.33
Cumberland River above the mouth of the Jellico, Ky	5,000.00		‡5,000.00
South Fork of Cumberland River, Ky	41.03	41.03	
Caney Fork River, Tenn	711.62	138.30	573.32
Hiawassee River, Tenn	69.41		69.41
South Forked Deer River, Tenn	4.30		4.30
Obeys River, Tenn	24.61		24.61
Duck River, Tenn	35.72		35.72
Red River, Tenn	23.68		§23.68
Monongahela River, W. Va. and Pa	62,174.64	657.80	61,516.84
Allegheny River, Pa	1,327.48	468.12	859.36
Herr's Island (Allegheny River), constructing dam at	37,340.00		†37,340.00
Muskingum River, Ohio, ice-harbor at mouth of	8,226.63	4,932.71	3,293.92
Muskingum River, Ohio	349.90	349.90	
Big Sandy River, W. Va	5,561.68	586.17	4,975.51
Little Kanawha River, W. Va	3,983.20	1,199.79	2,783.41
Ohio River	155,277.64	84,111.48	71,166.16
Falls of Ohio River at Louisville, Ky	228,228.23	206,757.37	21,470.86
Wabash River, Ind. and Ill	39,006.98	20,677.59	18,329.39
White River, Ind	4,918.34	995.00	3,923.34
Kentucky River, Ky	146,795.36	89,266.72	57,528.64
Tradewater River, Ky	491.70	1.00	490.70
Mississippi River at Natchez and Vidalia	750.65		750.65
Duluth Harbor, Minn	5,588.70	43.10	5,545.60
Superior Bay Harbor and St. Louis Bay, Wis	11,652.97	4.75	11,648.22
Agate Bay Harbor, Minn	9,420.77	7,569.06	1,851.71
Grand Marias Harbor, Minn	2,422.23		2,422.23
Ashland Harbor, Wis	21,343.53		21,343.53
Ontonagon Harbor, Mich	1,948.13		1,948.13
Eagle Harbor, Mich	2,886.33		2,886.33
Marquette Harbor, Mich	10,103.82		‖10,103.82
Grand Marais, Mich., harbor of refuge	27,573.51	25,000.00	2,573.51
Manistique Harbor, Mich	3,501.79		¶3,501.79
Cedar River Harbor, Mich	2,670.02		2,670.02
Menomonee Harbor, Wis	2,753.20		2,753.20
Oconto Harbor, Wis	424.74		424.74
Pensaukee Harbor, Wis	4,446.92		4,446.92
Green Bay Harbor, Wis	366.86		366.86
Sturgeon Bay Canal, Wis., harbor of refuge at entrance of	3,938.92		3,938.92
Ahnepee Harbor, Wis	15,414.67		**15,114.67
Kewaunee Harbor, Wis	423.77		423.77
Two Rivers Harbor, Wis	135.33		135.33
Manitowoc Harbor, Wis	5,144.96	3,548.94	1,596.02
Sheboygan Harbor, Wis	949.88		949.88

* Awaiting further action of Congress.
† Awaiting action of Congress granting authority to obtain the necessary land.
‡ Work obstructed by mill-dams which can not be removed without authority to purchase.
§ Held for additional appropriation in order that the whole dam may be completed under a single contract.
‖ Awaiting adoption of harbor lines.
¶ Awaiting rectification of pier lines by local company.
** Reserved pending compliance with proviso of river and harbor act of August 5, 1886.

Balances on hand for river and harbor works, November 1, 1887—Continued.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Port Washington Harbor, Wis	$1,149.97		$1,149.97
Examination of Portage Lake and Lake Superior ship canals, Mich	5,150.20		5,150 20
Examination of Sturgeon Bay and Lake Michigan ship canals, Wis	3,104.77		3,104.77
Milwaukee Bay, Wis., harbor of refuge	6,455.50	$300.00	6,155.50
Racine Harbor, Wis	746.38		746.38
Kenosha Harbor, Wis	832.25		832.25
Waukegan Harbor, Ill	2,781.98		2,781.98
Fox and Wisconsin Rivers, Wis	31,593.56	1,896.29	29,697.27
Chicago Harbor, Ill	7,651.08	627.20	7,023.88
Calumet Harbor, Ill	844.38		844.38
Illinois River, Ill	34,163.49	7,173.89	26,989.60
Calumet River, Ill	77,922.69	7,009.67	*70,913.02
Hennepin Canal, survey for	633.66		633.66
Illinois and Michigan and Hennepin Canals, examination of	14,557.64		14,557.64
Charlevoix Harbor, Mich	3,169.00		3,169.00
Frankfort Harbor, Mich	3,648.96		3,648.96
Portage Lake, Mich., harbor of refuge at	5,165.92	3,345.29	1,820.63
Manistee Harbor, Mich	9,740.58	1,396.37	8,344.21
Ludington Harbor, Mich	56,884.48		†56,884.48
Pentwater Harbor, Mich	5,844.91		5,844.91
White River Harbor, Mich	7,082.62	1,840.00	5,242.62
Muskegon Harbor, Mich	6,793.64	4,511.98	2,281.66
Grand Haven Harbor, Mich	12,980.48	388.90	12,591.58
Black Lake Harbor, Mich	6,041.81	2,993.57	3,048.24
Saugatuck Harbor, Mich	3,313.91	461.04	2,852.87
South Haven Harbor, Mich	1,768.61		1,768.61
Saint Joseph Harbor, Mich	2,480.52	370.63	2,109.89
Michigan City, Ind., outer Harbor at	28,208.31	3,216.89	24,991.42
Michigan City, Ind., inner harbor at	2,978.57		2,978.57
Saint Mary's River, Mich	168,487.99	167,421.59	1,066.40
Hay Lake Channel, Sault Ste. Marie, Mich	114,391.54	113,737.94	653.60
Cheboygan Harbor, Mich	16,505.68	1,167.27	15,338.41
Thunder Bay Harbor, Mich	4,525.07		4,525.07
Au Sable Harbor, Mich	4,861.53		4,861.53
Saginaw River Harbor, Mich	6,068.44	3,127.19	2,941.25
Lake Huron, Mich., harbor of refuge	21,604.08	403.16	21,200.92
Belle River, Mich., ice harbor of refuge	47.10		47.10
Saint Clair Flats Canal, Mich	7,540.31	7,273.21	267.10
Clinton River, Mich	6,000.00		6,000.00
Detroit River, Mich	375.52		375.52
Steam launch or tug at harbor of refuge, Lake Huron, Mich	4,116.06		4,116.06
Saint Mary's River and Saint Mary's Falls Canal, Mich	182.31		182.31
Toledo Harbor, Ohio (straight channel)	91,567.94	85,957.94	5,610.00
Port Clinton Harbor, Ohio	76.40	20.00	56.40
Sandusky City Harbor, Ohio	8,785.00	8,099.35	685.65
Sandusky River, Ohio	628.47		628.47
Cleveland Harbor, Ohio	94,326.59	91,202.59	3,124.00
Fairport Harbor, Ohio	962.05		962.05
Ashtabula Harbor, Ohio	9,330.94	7,806.58	1,524.36
Rocky River, Ohio	119.31		119.31
Erie Harbor, Pa	77,233.04	1,726.24	75,506.80
Dunkirk Harbor, N. Y	7,251.32	3,857.03	3,394.29
Buffalo Harbor, N. Y	48,215.88	24,855.00	23,360.88
Niagara River, N. Y	587.52		587.52
Wilson Harbor, N. Y	9,013.61	1,160.00	7,853.61
Olcott Harbor, N. Y	8,926.28	5,224.35	3,701.93
Oak Orchard Harbor, N. Y	7,874.71	4,137.59	3,737.12
Charlotte Harbor, N. Y	20,348.13	6,279.74	14,068.39
Pultneyville Harbor, N. Y	2.90		2.90
Great Sodus Bay Harbor, N. Y	13,744.51	3,295.95	10,448.56
Little Sodus Bay Harbor, N. Y	13,714.38	2,999.26	10,715.12
Oswego Harbor, N. Y	53,527.64	20,008.63	33,519.01
Sacketts Harbor, N. Y	60.59		60.59
Grass River, N. Y	2,948.60		2,948.60
Rouse's Point Breakwater, Lake Champlain, N. Y	18,001.42	17,023.00	978.42
Swanton Harbor, Vt	326.93		326.93
Gordon's Landing Breakwater, Lake Champlain, Vt	17,217.72	15,077.84	2,139.88
Plattsburgh Harbor, N. Y	4,319.62	3,634.96	684.66
Burlington Harbor, Vt	19,604.41	16,131.59	3,472.82

* Reserved pending compliance with proviso of river and harbor act of August 5, 1886.
† Awaiting action of Congress granting authority to obtain the necessary land.

Balances on hand for river and harbor works November 1, 1887—Continued.

Locality.	Balance on hand November 1.	Amount covered by outstanding liabilities and existing contracts.	Amount available November 1.
Otter Creek, Vt	$648.34		$648.34
Ticonderoga River, N. Y	133.71		133.71
Narrows at Lake Champlain, N. Y. and Vt	14,818.28	$12,014.49	2,803.79
Oakland Harbor, Cal	7,645.57		7,645.57
Redwood Harbor, Cal	1,660.84		1,660.84
Breakwater and Harbor of Refuge, between Straits of Fuca and San Francisco, Cal	141,373.08		141,373.08
Survey of San Francisco Harbor, San Pablo, and Suisun Bays, Strait of Carquinez, and mouths of San Joaquin and Sacramento Rivers, Cal	8,167.25		8,167.25
San Joaquin River, Cal	10,007.87	1,047.90	8,959.97
San Francisco Harbor, Cal	3,828.57		3,828.57
Wilmington Harbor, Cal	60,914.67	51,181.75	9,732.92
San Diego Harbor, Cal	41.91		41.91
Survey of San Diego, Newport, and San Luis Obispo Harbor, Cal	626.84		626.84
Mokalumna River, Cal	39.42		39.42
Sacramento and Feather Rivers, Cal	119,482.66		*119,482.66
Petaluma Creek, Cal	2,343.09		2,343.09
Humboldt Harbor and Bay, Cal	137,200.11		†137,200.11
Columbia River, Oregon and Wash., mouth of	130,505.28	38,497.03	92,008.25
Chehalis River, Wash	287.67	1.54	286.13
Skagit, Stielaquamish, Nootsuck, Snohomish, and Snoqualmie Rivers, Wash	1,572.98	776.03	796.95
Gauging waters of the Columbia River, Oregon	38.49	3.00	35.49
Columbia River at the Cascades, Oregon	53,619.56	11,939.36	41,680.20
Yaquina Bay, Oregon, entrance to	25,408.03	5,255.86	20,152.17
Coquille River, Oregon, mouth of	1,094.89	26.93	1,067.96
Coos Bay and Harbor, Oregon, entrance to	30,887.11	148.49	30,738.62
Umpqua River, Oregon	14.04		14.04
Upper Columbia and Snake Rivers, Oregon and Wash	25.88		25.88
Columbia and Lower Willamette Rivers below Portland, Oregon	23,954.80	19,996.72	3,958.08
Willamette River, above Portland, Oregon	1,968.05	364.44	1,603.61
Missouri River, from its mouth to Sioux City	82,189.86	20,608.78	61,581.08
Mississippi River, from Cairo to the head of the Passes	1,175,052.77	672,357.73	502,695.04
Examinations, surveys, and contingencies of rivers and harbor	31,661.83		31,661.83
Total	8,645,872.65	4,124,082.33	4,521,790.32

* Reserved pending compliance with condition contained in river and harbor act of August 5, 1886.
† Reserved pending compliance with proviso of river and harbor act of August 5, 1886.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. 55, Part 1.

OPERATIONS OF MISSISSIPPI RIVER COMMISSION.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With financial statements, a report of the operations of the Mississippi River Commission from July 1 to November 1, 1887.

JANUARY 9 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 3, 1888.

As required by section 4 of the river and harbor act of August 5, 1886, the Secretary of War has the honor to transmit to the House of Representatives a report of the operations of the Mississippi River Commission from July 1 to November 1, 1887, together with financial statements relating to the appropriations in said act.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

THE MISSISSIPPI RIVER COMMISSION,
PRESIDENT'S OFFICE,
New York, December 16, 1887.

SIR: To bring up the record of the Mississippi River Commission to November 1, 1887, I have the honor to submit the following report of operations since the close of the last fiscal year:

SURVEYS.

For want of means no field work has been attempted. A small number of assistants have been engaged in the work of reducing and preparing for publication the material already at hand. I can not too strongly represent the necessity, which the secretary of the Commission in his annual report urges, of an early and liberal provision for securing in permanent form information now only in manuscript or in the orig-

inal note-books, and liable at any time to entire and irrecoverable loss. The work now being done will have to be curtailed before the close of the present fiscal year.

CONSTRUCTION.

At the meeting of the Commission held June 30 to July 2, 1887, previous allotments which had not been approved were canceled, and the greater portion of the sum devoted to them reallotted to levee construction, leaving such amounts as were thought necessary for the care of plant, office expenses, surveys, and protection of existing works, as appears in the following statement:

WITHDRAWN FROM ALLOTMENT.

For Plum Point Reach:	
Fletcher's revetment	$180,000
Elmot and Island 30, dikes	130,000
Unassigned balance	27,250
For Lake Providence Reach:	
Pilcher's revetment (repairs)	135,000
Pilcher's revetment (extension)	40,000
Cottonwood, Lake Providence, and Baleshed dikes	67,140
For the general service	45,000
Unallotted balance	69,000
Total	693,390

REALLOTTED.

For care of plant, first and second districts, from October 1, 1886, to June 30, 1888	$45,000
For surveys, first and second districts	10,000
For maintenance of existing works, first district	27,250
For levees, Plum Point Reach, west bank	75,000
For care of plant and surveys, third district, from October 1, 1886, to June 30, 1888	45,000
For protection of existing works, third district	25,000
For protection of Delta Point	10,000
For levees, White River front	75,000
For levees, Tensas front	321,140
For Robinsonville levee, Yazoo front	60,000
Total	693,390

FIRST DISTRICT.

The contraction works in Plum Point Reach have been almost constantly above water, and consequently exposed to no attacks. The middle section of revetment at Fletcher's is still in place, although its nearest supports are about 5,000 feet distant on either side. From the fact that whatever loss has occurred here has been from caving above and below, allowing this widely detached section to be taken in flank, Captain Leach is led to believe that the protection of banks caving only at a moderate rate may be effected by discontinuous revetment at a large saving in cost.

The exceptional low water of the past season has given an opportunity to judge of the effect of the improvement at Plum Point Reach by comparison with unimproved parts. Before work had been done here Bullerton Bar, at the stage of water prevailing this season, would not have given more than 4½ feet of water. During this low water there has never been less than 9 feet on the reach, while in the remaining 400 miles of the first and second districts there are about twenty crossings ranging from 8 feet to 5½ feet in depth.

Levees, first district.—Owing to favorable weather, the low price of abor, and the fact that the work required is lighter than was expected, he extent of line on the west bank, which will be closed by the allotnent of $75,000, will considerably exceed the estimate. About 22 miles vill be constructed. The work is in progress under two contracts, at 14¾ cents and 15½ cents per cubic yard, respectively.

SECOND DISTRICT.

The channel works have been confined to the vicinity of Memphis, Tenn., and consist exclusively of shore protection. The work in Memphis Harbor is now complete, no part of the revetment made under the plans of the Commission having suffered the slightest disturbance. By this work, and by the citizens' bluff protection, constructed on the plans and under the supervision of Captain Leach, the whole city front is considered perfectly secure. The revetment placed here by the United States is the heaviest and most costly work of the kind ever done. Including all the mishaps of the experimental stage, its cost has been about $30 per linear foot of bank, though, with methods of construction now in use, the cost of similar work should not exceed $25 per foot. Captain Leach says, "* * * it will certainly protect any alluvial bank on the Mississippi River, no matter how difficult." As will be seen later, the cost of revetment in ordinary cases will not exceed two-thirds of this, and may be even much less.

Since July 1 an allotment of $60,000 for extension of the revetment in Hopefield Bend, above the city, has become available. It was expected that this sum would be required for protecting 3,000 feet of bank; but from a concurrence of favoring circumstances, and more especially as a result of acquired experience, it is now certain that from 25 to 30 per cent. more work will be effected than was contemplated. The work has suffered no recent loss; but constant caving of the unprotected bank takes place, and the revetment should be extended about 2,000 feet below the point which will be reached under the present allotment.

Levees, second district—Yazoo front.—An allotment of $60,000 was made, conditioned upon a contribution from the levee district of a sum sufficient to complete the line. The conditions have been accepted by the levee board; but for financial and other reasons they do not think it expedient to begin the work before the next low water.

Levees—White River front.—An allotment of $75,000 was made to rebuild the levee from Helena down, conditioned upon the contribution of $50,000 by the cotton-belt levee district of Arkansas. The condition having been complied with, contracts for the parts to be built by the United States have been made at an average price of 16¼ cents per cubic yard.

THIRD DISTRICT.

Lake Providence Reach.—Work has been confined to care of plant and minor repairs; no change in the condition of the channel works is reported. On account of the unfinished state of the works this reach is not in as satisfactory condition as Plum Point Reach. At Stack Island Crossing, where the channel is inclined to divide more than elsewhere, the least depth reported was 7 feet. This, it is true, was only for a few days, the depth at a lower stage of water being not less than 9 feet. At other crossings on the reach the least depth has been 11 feet or more.

Vicksburg Harbor.—It is expected that with the available allotment the canal will be dredged to the plane of 18 feet on the gauge; but as the river has, since the approval of the project, remained below that stage, work has been impossible. A contract has, however, been made at 18 cents per cubic yard, and the work will begin so soon as the stage of water will permit.

The revetment at Delta Point has remained without change, but some caving is taking place above it, which, although at present favorable to the protection of the point itself, may in the future make it necessary to extend the work up-stream.

Greenville Harbor.—The approved project for expending the allotment of $37,500, together with $42,500 contributed by the city of Greenville, contemplates a system of ten sloping-spurs similar to those built at New Orleans and Memphis, along about 5,000 feet of bank. Two of these are completed, two more in progress, and it is expected that the whole series will be finished before high water.

Levees—third district.—Under the allotment by the Board of Engineers on Levees, made July 2, 1887, of $56,500 for the Opossum Fork levee, and that made July 25 of $155,083 for building and repair of levees, Tensas front, Arkansas, contracts have been made at prices varying from 16 to 28 cents per cubic yard. In co-operation with the local levee boards work is in progress along the line, with a fair prospect of completion before the next high water.

FOURTH DISTRICT.

New Orleans Harbor.—A survey of Gouldsboro Bend shows that, so far as completed, the works have accomplished their purpose of holding the bank and preventing caving, although no marked deposit is observed. Preparations have been made for the authorized extension of the protection and work will be begun at once.

Red and Atchafalaya rivers.—Since July 1 over $13,000 has been expended in an ineffectual attempt to keep open the channel of Red River from the Mississippi to the Atchafalaya. Both the Red and Mississippi were at an unusually low stage through the season, and the absence of current in Old River prevented the removal by scour of material stirred up by scraping or other means. It seems certain that annual dredging can not be relied on to keep open this channel at a justifiable cost.

In the Atchafalaya River seven mats for the first sill have been laid, covering a length of 560 feet. These mats are each about 80 by 300 feet, and 3 feet thick, loaded with over 400 tons of stone. The contractors having failed to supply stone as required, the Government plant and hired labor were used to obtain from the Ouachita River what was needed. Captain Kingman is of opinion that work of this kind can be better and more cheaply done by hired labor than by contract.

Levees.—The contracts for Deer Park and Kempe levees have been let, and work is in progress on both.

Money statement.

Amount available June 30, 1887		$1,372,706.71
Amount expended present fiscal year, exclusive of liabilities outstanding June 30, 1887	$218,834.38	
Outstanding liabilities November 1, 1887	58,007.34	
Covered by contracts November 1, 1887	614,350.39	
		891,192.11
Balance available November 1, 1887		481,514.60

Herewith are sent copies of the reports upon the first and second districts, containing details of interest.

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers, Bvt. Maj. Gen., U. S. A.,
President Mississippi River Commission.

The SECRETARY OF WAR,
Washington, D. C.
(Through the Chief of Engineers.)

[First indorsement.]

OFFICE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
December 22, 1887.

Respectfully transmitted to the Secretary of War with inclosures.

J. C. DUANE,
Brig. Gen., Chief of Engineers.

REPORT OF CAPTAIN S. S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE FIRST DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., November 15, 1887.

GENERAL: Pursuant to the requirements of section 4 of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report to November 1, 1887, of the "work done, contracts made, the expenditures thereunder or otherwise, and balances of money on hand up to November 1, and the effect of such work," so far as relates to the portion of the works in my charge embraced in the first district.

The district extends from Cairo, at the mouth of the Ohio, to the foot of Island 40, a distance of 220 miles. The only place in the district where actual work has ever been undertaken is the Plum Point Reach, where, for a distance of 12 miles, beginning 157 miles below Cairo, the river has been brought under control as to its channel and the flood escape practically prevented. The extent and location of works have been fully reported on, and their condition and the results obtained and maintained have been chronicled from time to time, my last report bringing the subject down to the close of the last fiscal year.

There has been but little change in the condition of the channel works since last report. The contraction works have been almost constantly above water, and therefore out of the reach of danger. The bank revetments are in the same condition as at last report—that is, they are generally in good order and effective.

The middle section of the Fletcher's revetment, the remarkable endurance of which has been repeatedly commented upon in my reports, is still in place. It seems to have suffered little, if any, damage since the last report. It was intended to form part of a continuous revetment of the bend, near the middle of which it is situated. In January, 1885, work upon it was interrupted from exhaustion of funds, and has never been resumed. It was left a short, unfinished piece of work, isolated in the middle of a rapidly caving bend, with its nearest supports nearly a mile distant above and below. This short piece of work withstood all front attacks, and only succumbed in part when the caving of

the unprotected bank above and below it, to a distance of 400 feet back of its position, caused it to be attacked in rear at both ends. Even under this great disadvantage it has yielded but slowly, and for the last year and a half has protected the entire bend from caving to any pernicious extent. With such pieces of revetment placed at supporting distances of 500 feet instead of 5,000, as in this case, it can not be doubted that the bank will be permanently and effectively prevented from caving. I am, therefore, impelled to repeat with added emphasis the statement made in my report of July 30, 1886, to the effect that caving banks of average difficulty can be protected by discontinuous revetment. I would recommend at the outset that the spaces be equal in length to the revetments, which would effect at once a saving of 50 per cent. in cost.

The low water of this year has been unusual, both in its small volume and prolonged duration. As a consequence, commerce has suffered greatly from obstructed navigation. At present the load draught of boats running from Cairo down is limited to less than 5 feet by a crossing at Phillips, 50 miles below, where the most careful search with a sounding-pole has discovered no greater depth than 5 feet 2 inches. Besides this, pilots are now reporting on the 400 miles of river, comprising the two districts in my charge, the following bad places: Four of 6 feet depth, one of 6½, nine of 7, two of 7½, and five of 8 feet, making a grand total of twenty-two places in half the river where the navigable depth does not exceed 8 feet. Before the improvement was begun at Plum Point, Bullerton Bar was notoriously the worst one below Cairo and could be depended upon to give a foot less water than any other crossing. It is conceded by all informed river men that in such a water as this no more than 4½ feet could have been found there. In its improved condition the actual depths, determined frequently and with care, have never fallen below 9 feet, thus making this place twice as deep as formerly, and better than twenty-two other places which used to exceed it in depth.

This season, for the first time in the history of the work, the discharge of the river at the lowest stage was entirely through the regulated channel.

Levees.—At the last meeting of the Commission an allotment of $75,000 was made for "Levees Plum Point Reach, west bank." The allotment was made in the belief that it would cover but a part of the reach, but the survey showed the quantities to be less than had been assumed, and this, with the very low prices obtained, so much increased the length of line which could be covered with the money, that a standard levee will be built from the intersection of Mill and Bear bayous, opposite Ashport, to a connection with the old levee on Craighead Point, a distance of 22 miles, or nearly double the improved portion of the reach. The old levee, with which a junction is effected at the lower end, is 8 miles long and in fair condition. The few breaks will be put up by the planters behind it, and its length will be added to the 22 miles mentioned, so that the application of this allotment closes 30 miles of the Saint Francis front against the escape of flood waters from the river.

Proposals for the work were opened September 20, and were as follows:

Abstract of proposals for levee work on Plum Point Reach, west bank, received in response to advertisement dated August 18, 1887, and opened September 20, 1887, by Captain Smith S. Leach, Corps of Engineers.

Name of bidders.	Earth-work per cubic yard on sections. South. 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	North. 1	2	3	4	Felling timber (per acre).	Sodding (per square yard).	Remarks.
	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.	Cts.			
J. S. Grant, J. K. Jeffries, and C. A. Dameron, Nebletta, Miss.	22½	22½	22½	22½	24½	24½	24½	24½	24½	24½	24½	....	....	....	21½	21½	21½	21½	21½	23½	23½	23½	23½	$35	$0.01½	
J. A. Forrest and George B. Forrest, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18½	19½	20½	20½	19½	....	....	....	....	60	.01½	
Aylette R. Fudge, Memphis, Tenn.	21	21	20	19	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	17½	20	20	19	....	....	....	....	35	.01 to .02	Others 5 to 16.
J. J. Cooney, Memphis, Tenn.	16½	16½	16½	16½	....	....	....	....	....	19	19	....	....	....	15	18	16½	16½	16½	....	....	....	....	40	.01	
William B. Strang, jr., Memphis, Tenn.	....	....	....	....	16	16	16	16	16	16	16	16	16	16	16	....	....	....	....	....	....	....	....	40	.01	
John S. McTighe and I. L. Mackee, Memphis, Tenn.	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	17¾	50	.01½	
C. H. Diahman, president Central Construction Co., Henderson, Ky.	17⅞	17⅞	17⅞	17⅞	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17⅞	17⅞	17⅞	17⅞	50	.01	
Serbian, Wright & Co., Cairo, Ill.	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	15½	40	.01½	
Joseph C. Neeley, Bardwell, Ky.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	19½	19½	19½	19½	60	.....	
Thomas F. Duffin and Henry Duffin, Memphis, Tenn.	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	40	.01	
J. T. Jefferson, Memphis, Tenn.	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	....	....	....	....	50	.01	
Robert Johnson, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	40	.01½	18 cents. Section numbers not given.
J. W. Jefferson & Co., Memphis, Tenn.	....	....	....	....	....	19	18½	18	17½	17	....	....	....	....	....	....	....	....	....	....	....	....	....	42	.....	
J. E. Richards, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18	18	25	34	25 75	.01½	Nos. 1 and 2. Nos. 3 and 4.
George Arnold and W. O. Flynn, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	65	.02	21½ cents. Section numbers not given.
John A. Cannon and T. O'Hara, Greenville, Miss.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18	18	18	18	18	....	....	....	....	S. B. 10 H. C. 75 L. C. 35	.02	
W. E. Smith and Thomas Foley, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	23	23	23	23	23	....	....	....	....	S. B. 10 35	.....	
Timothy Sullivan, Memphis, Tenn.	18	18	18	18	21	21	21	21	21	21	21	21	21	21	14¾	14¾	14¾	14¾	14¾	19	19	19	19	40	.03	
Reese Thomas, Memphis, Tenn.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	17½	17½	17½	17½	17½	....	....	....	....	45	.01½	
Hugh Feran, Memphis, Tenn.	....	....	....	....	24	24	24	24	24	24	....	....	....	....	....	....	....	....	....	....	....	....	....	100	1.50	Sta.
C. H. Wilson, Greenville, Miss.	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	.....	.01	

The award was made to the lowest bidders, Serbian, Wright & Co., of Cairo, Ill.; sections 1 to 4 inclusive, north, and sections 1 to 14 inclusive, south, at 15½ cents; and Timothy Sullivan, of Memphis, Tenn., sections 15 to 19 inclusive, south, at 14¾ cents.

Work is now in rapid progress.

A table of depths and velocities observed on the Plum Point Reach July, 1886, to November, 1887, is herewith; also detailed statements of expenditures and financial statements and general balance-sheet for the district.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

General Q. A. GILMORE,
President Mississippi River Commission.

Table showing comparative least channel-depths and velocities in various channels of the improved portion of Plum Point Reach, Mississippi River.

Localities.		First group.						Second group.							
		Lower Plum Point Crossing.		Bullerton Channel.		Bullerton Chute.		Lynch's.		Island No. 30 Channel.		Elmot Chute.		Island No. 30 Chute.	
Date.	Gauge.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.
1886.	*Feet.*														
July 6	17.15	.....	.....	15.0	.....	....	.....	18.0	.....	23.5	.....	....	....	....	....
9	14.90	24.0	4.70	14.0	3.17	....	0.94	16.0	.....	21.0	4.78	....	3.79	....	2.63
13	12.65	19.5	4.83	13.5	3.30	....	0.81	14.5	.....	20.5	4.33	....	3.30	....	2.14
16	11.70	18.5	5.28	13.0	3.04	....	0.90	14.0	.....	20.0	5.28	....	....	....	....
19	10.35	17.0	.....	12.0	.....	....	.....	12.0	.....	19.0	.....	....	....	....	....
23	8.50	17.0	5.12	10.0	3.34	....	0.64	.....	.....	17.0	4.29	....	....	....	....
26	7.15	15.0	5.16	7.5	3.59	....	0.60	8.5	.....	17.0	4.54	....	....	....	....
30	5.75	14.5	.....	6.5	.....	....	.....	8.5	.....	16.0	.....	....	....	....	....
Aug. 9	4.30	11.0	4.95	5.5	3.46	....	.....	5.5	3.63	11.0	5.12	....	....	....	....
18	4.60	13.0	5.33	6.0	3.09	....	.....	8.5	4.41	14.0	4.29	....	....	....	....
25	4.25	13.5	.....	6.5	.....	....	.....	7.5	.....	13.0	.....	....	....	....	....
28	4.80	13.5	4.70	6.5	2.88	....	.....	9.5	3.96	13.0	4.46	....	....	....	....
Sept. 2	4.50	13.5	4.87	5.5	3.00	....	.....	8.5	4.37	13.5	4.50	....	....	....	....
7	3.35	12.0	5.04	4.5	3.42	....	.....	7.0	3.54	12.0	4.12	....	....	....	....
20	1.75	10.5	4.95	.....	.....	....	.....	.....	.....	10.0	3.88	....	....	....	....
24	1.90	10.0	4.37	.....	.....	....	.....	.....	.....	10.0	3.92	....	....	....	....
29	1.65	10.5	4.91	.....	.....	....	.....	.....	.....	10.5	4.17	....	....	....	....
Oct. 4	1.90	10.5	4.83	.....	.....	....	.....	.....	.....	10.0	4.12	....	....	....	....
9	2.65	12.0	4.66	.....	.....	....	.....	.....	.....	11.5	3.87	....	....	....	....
15	2.00	12.5	3.30	.....	.....	....	.....	.....	.....	10.5	3.67	....	....	....	....
22	0.65	10.0	3.88	.....	.....	....	.....	.....	.....	9.0	3.83	....	....	....	....
25	0.35	11.0	3.71	.....	.....	....	.....	.....	.....	8.5	3.96	....	....	....	....
Nov. 10	0.10	10.5	3.30	.....	.....	....	.....	.....	.....	8.5	3.46	....	....	....	....
12	0.10	13.0	.....	.....	.....	....	.....	.....	.....	9.0	.....	....	....	....	....
16	0.05	12.0	3.79	.....	.....	....	.....	.....	.....	9.0	3.75	....	....	....	....
19	0.20	13.0	3.88	.....	.....	....	.....	.....	.....	9.5	3.59	....	....	....	....
30	12.80	29.0	4.04	15.0	2.63	....	.....	19.0	4.17	22.0	4.75	....	....	....	....
Dec. 10	7.15	21.5	3.83	9.0	2.34	....	0.69	10.0	3.62	17.0	3.75	....	....	....	....
17	3.75	19.0	3.55	.....	.....	....	.....	.....	.....	13.0	3.88	....	....	....	....
1887.															
Jan. 14	6.45	19.5	4.04	.....	.....	....	.....	.....	.....	13.0	4.17	....	....	....	....
20	5.00	.....	.....	7.0	3.43	....	.....	7.0	4.18	.....	.....	....	....	....	....
26	8.50	22.5	4.30	10.5	3.50	....	.....	10.5	3.26	16.5	4.47	....	....	....	....
31	18.70	33.5	4.87	22.0	.....	....	1.14	21.5	3.92	28.0	4.62	....	....	....	....
Feb. 9	27.90	42.0	4.87	30.0	4.16	....	3.00	31.0	5.20	38.5	4.79	....	....	....	....
19	31.22	44.0	5.24	32.0	3.63	....	2.79	34.0	5.74	41.0	4.50	....	....	....	4.70
28	32.10	45.5	5.37	32.0	3.17	....	.....	32.5	5.41	43.5	4.00	....	....	....	....
Mar. 5	32.29	.....	.....	31.0	4.29	....	2.95	.....	.....	.....	.....	....	....	....	....
7	32.40	46.5	4.84	.....	.....	....	.....	32.0	5.18	45.0	4.58	....	3.90	....	5.38
18	32.20	45.0	5.36	34.0	3.93	....	2.96	32.5	5.19	.....	.....	....	....	....	5.03
19	32.03	.....	.....	.....	.....	....	.....	.....	.....	44.0	5.33	....	....	....	....
31	16.50	27.0	.....	15.5	.....	....	2.40	.....	.....	30.0	.....	....	....	....	....
Apr. 7	15.94	27.0	.....	13.5	.....	....	.....	15.5	.....	28.5	.....	....	....	....	....
11	14.00	26.0	.....	12.5	.....	....	1.60	13.5	.....	27.0	.....	....	....	....	....
29	23.80	36.5	6.06	24.0	3.46	....	3.02	24.0	5.74	37.0	5.82	....	....	....	....

Table showing comparative least channel-depths and velocities, etc.—Continued.

Localities.		First group.						Second group.							
		Lower Plum Point Crossing.		Bullerton Channel.		Bullerton Chute.		Lynch.		Island No. 30 Channel.		Elmot Chute.		Island No. 30 Chute.	
Date.	Gauge.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.	Depth.	Velocity.
1886.	*Feet.*														
May 9	24.90	37.0	5.29	24.5	3.50	....	2.91	23.5	4.84	38.0	4.82	....	....	....	....
17	18.40	28.5	4.76	14.5	2.95	....	1.99	14.5	3.30	29.0	5.95	....	....	....	....
24	14.80	25.0	4.49	13.0	2.85	....	1.77	14.0	4.21	26.0	5.92	....	....	....	....
June 1	9.80	18.0	4.30	6.5	2.36	....	0.81	8.0	3.08	18.0	4.74	....	....	....	....
17	11.30	20.0	4.25	9.0	2.17	....	1.24	10.0	4.03	24.0	5.20	....	....	....	....
23	12.80	24.0	4.48	9.5	2.93	....	1.15	11.0	3.99	25.0	4.76	....	....	....	....
27	9.70	20.0	4.18	.....	.....	....	1.00	.....	.....	23.0	4.60	....	....	....	....
July 1	8.40	17.5	3.76	.....	.....	....	0.96	.....	.....	21.0	5.87	....	....	....	....
6	8.53	17.0	4.14	5.0	2.44	....	0.65	7.0	4.14	20.5	5.31	....	....	....	....
11	5.40	17.0	4.33	4.5	2.17	....	1.03	7.0	3.70	22.0	5.27	....	....	....	....
18	6.50	16.5	4.06	.....	.....	....	0.96	.....	.....	19.0	5.12	....	....	....	....
22	4.90	13.5	4.52	.....	.....	....	0.85	.....	.....	18.0	4.85	....	....	....	....
27	3.80	11.5	4.01	.....	.....	....	0.66	.....	.....	14.5	4.50	....	....	....	....
Aug. 1	3.20	11.0	4.17	.....	.....	....	0.52	5.5	.....	16.0	4.17	....	....	....	....
8	2.05	11.5	4.36	.....	.....	....	.....	.....	.....	15.0	4.21	....	....	....	....
19	1.80	10.5	4.48	.....	.....	....	0.44	.....	.....	15.0	4.29	....	....	....	....
22	1.40	10.5	4.37	.....	.....	....	.....	5.0	4.30	14.5	3.57	....	....	....	....
29	0.45	9.0	4.44	.....	.....	....	.....	.....	.....	12.0	3.50	....	....	....	....
Sept. 7	0.45	11.0	4.22	.....	.....	....	.....	4.5	4.06	13.0	4.12	....	....	....	....
9	0.20	10.5	4.59	.....	.....	....	.....	.....	.....	13.0	4.78	....	....	....	....
13	—0.35	9.5	4.92	.....	.....	....	.....	.....	.....	11.0	4.92	....	....	....	....
17	0.60	10.5	4.74	.....	.....	....	.....	5.0	3.90	13.0	4.59	....	....	....	....
21	0.50	10.5	3.53	.....	.....	....	0.30	.....	.....	12.0	4.15	....	....	....	....
26	2.00	12.5	3.80	.....	.....	....	0.50	6.0	3.67	13.0	4.22	....	....	....	....
Oct. 3	0.45	10.0	4.19	.....	.....	....	0.38	.....	.....	11.0	3.85	....	....	....	....
8	0.10	10.5	4.03	.....	.....	....	.....	4.5	3.27	11.0	3.73	....	....	....	....
14	—0.55	9.0	3.95	.....	.....	....	.....	.....	.....	10.5	3.53	....	....	....	....
17	—0.70	10.0	4.03	.....	.....	....	.....	4.0	3.53	9.0	3.49	....	....	....	....
27	—1.65	9.0	4.03	.....	.....	....	.....	3.0	3.42	9.0	3.38	....	....	....	....

NOTES.—The depths reported are the least found in the line of deepest water, or those which limited navigation for the time being. The velocities were measured on the same line and near the shoalest point. They were all taken with the current meter running at a depth of 5 feet below the surface. They are individual velocities, taken to ascertain the relative draught of water in the different channels, and are useful for that purpose only. They have no relation to the average velocity or discharge.

The crossings forming group I of the table may be considered as competitors for the channel over Bulletin Bar. The third, Bullerton Chute, was completely closed by works; the second, Bullerton Channel, has remained partly obstructed by the diverting action of the works favoring the first channel which latter has remained good by reason of carrying the water diverted from the other two.

The four channels of the second group are also competitors, of which the third and fourth have been restricted in discharge by the Gold Dust dikes, and the first by the directive action of the Fletcher's revetment. The second, Island 30, has carried the bulk of the water and has remained good.

Appropriation for improving Mississippi River, first district.

FINANCIAL STATEMENT.

Balance on hand June 30, 1887, as per last report		$376,947.59
Amounts received since:		
Overpayment refunded	$6.00	
Reallotted by Mississippi River Commission, viz:		
Levees, Plum Point Reach, west bank	75,000.00	
Protection of existing works, first district	27,250.00	
Received from allotment for "care of plant, first and second districts," to cover expenditures from October 1, 1886, to June 30, 1887	19,994.00	
		122,250.00
Total		499,197.59
Expended from July 1 to October 31, 1887, viz:		
On account Plum Point Reach	2,866.04	
On account levees, Plum Point Reach	1,579.80	
Reallotted by Mississippi River Commission	337,250.00	
		341,695.84
Balance October 31, 1887		157,501.75

General balance-sheet.

PLUM POINT REACH.

Dr.					Cr.
1887.			1887.		
June 30	To balance	$326,301.25	July 2	By amount reallotted by Mississippi River Commission.	$337,250.00
Apr. 11	To overpayment refunded.	6.00			
July 2	To amount received from allotment for "care of plant, first and second districts."	19,994.00	Oct. 31	By amount expended from July 1, 1887, to date.	2,866.04
			Oct. 31	By balance	6,185.21
		346,301.25			346,301.25

LEVEES, PLUM POINT REACH.

1887.			1887.		
June 30	To balance	$13,146.34	Oct. 31	By amount expended from July 1, 1887, to date.	$1,579.80
July 2	To amount allotted to levees, Plum Point Reach, west bank.	75,000.00	Oct. 31	By balance	86,566.54
		88,146.34			88,146.34

HICKMAN, KY.

1887.			1887.		
June 30	To balance	$18,750.00	Oct. 31	By balance	$18,750.00

COLUMBUS, KY.

1887.			1887.		
June 30	To balance	$18,750.00	Oct. 31	By balance	$18,750.00

FIRST DISTRICT.

Disbursements made under appropriation for improving Mississippi River, act of August 5, 1886.

[November 1, 1886, to November 1, 1887.]

Contracts made with—	For what made.	Disbursements under contract.	Liabilities under contract.	Total.
L. Frits	Metal roofing	$6,619.40		$6,619.40
J. S. McTighe & Co	Levee work	82,772.89		82,772.89
Timothy Sullivan	do		$75,000.00	75,000.00
Serbian, Wright & Co	do			
		89,392.29	75,000.00	164,392.29

Disbursements otherwise than under contract.

For what expended.	By public notice and sealed proposals.	In open market.	Liabilities.	Total.
Material and supplies	$10,857.77	$4,556.38		$15,414.15
Subsistence supplies	2,077.45	1,940.46		4,017.91
Services		29,454.46		29,454.46
Miscellaneous	263.83	1,029.15		1,292.98
	13,199.05	36,980.45		50,179.50

SMITH S. LEACH,
Captain of Engineers.

Appropriation for improving Mississippi River, first and second districts.

FINANCIAL STATEMENT.

Amounts allotted by Mississippi River Commission on July 2, 1887, viz:		
Care of plant, first and second districts	$45,000.00	
Surveys, first and second districts	10,000.00	
		$55,000.00
Expended from July 1 to October 31, 1887, viz:		
Transferred to allotment for Plum Point Reach to cover expenditures for care of plant from October 1, 1886, to June 30, 1887	19,994.00	
Expended on account, care of plant	6,315.42	
Expended on account, surveys	480.35	
		26,789.77
Balance, October 31, 1887		28,210.23

General balance-sheet.

CARE OF PLANT.

Dr.					Cr.
1887 July 2	To amount allotted by Mississippi River Commission	$45,000.00	1887. July 2	By amount transferred to allotment for Plum Point Reach, to cover expenditures for care of plant, Oct. 1, 1886, to June 30, 1887	$19,994.00
			Oct. 31	By amount expended from July 1, 1887, to date	6,315.42
			Oct. 31	By balance	18,690.58
		45,000.00			45,000.00

SURVEYS.

1887. July 2	To amount allotted by Mississippi River Commission	$10,000.00	1887. Oct. 31	By amount expended from July 1, 1887, to date	$480.35
			Oct. 31	By balance	9,519.65
		10,000.00			10,000.00

FIRST AND SECOND DISTRICTS.

Disbursements, otherwise than under contract, made under appropriation for improving Mississippi River, act of August 5, 1886.*

[November 1, 1886, to November 1, 1887.]

For what expended.	By public notice and sealed proposals.	In open market.	Liabilities.	Total.
Material and supplies	$79.82	$21.29	$123.45	$224.56
Subsistence supplies	776.97	463.12	157.18	1,397.27
Services	.....	5,197.49	1,602.70	6,800.19
Miscellaneous	.....	257.08	.....	257.08
	856.79	5,938.98	1,883.33	8,679.10

SMITH S. LEACH,
Captain of Engineers.

* No contracts made.

Itemized statement of expenditures, improving Mississippi River first and second districts, October 1, 1886, *to October* 31, 1887.

Articles.	Repairs to plant.		Care of plant.		Repairs to Plum Point dikes.	Surveys and examinations.	Total.
	First district.	Second district.	First district.	Second district.			
Lumber	$736.21	$46.00	$4.89	$1.25			$788.35
Oakum	391.26	101.19	2.80				495.25
Nails	43.13	3.83	.92	.57			48.45
Spikes	27.82	.40			$55.62		83.84
Iron	308.96	28.31	15.93	12.28			365.48
Pipe fittings	98.53	7.82		1.14			107.49
Paint	255.45	42.99	27.60	12.93			338.97
Coal	220.34	23.38	457.06	313.16	261.80	$210.98	1,486.72
Rope			369.65	184.82	31.06	8.80	594.33
Salt			117.50	58.75			176.25
Piling			30.00	15.00	1,274.11		1,319.11
Wire					665.62		665.62
Miscellaneous	337.20	27.18	91.88	50.21	34.78	13.22	554.47
Labor	9,418.85	1,354.85	9,771.59	4,991.27	2,642.19	2,430.62	30,609.37
Totals	11,837.75	1,635.95	10,889.82	5,641.38	4,965.18	2,663.62	37,633.70

SMITH S. LEACH,
Captain of Engineers.

REPORT OF CAPTAIN S. S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE SECOND DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., November 15, 1887.

GENERAL: Pursuant to the requirements of section 4 of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report to November 1, 1887, of the "work done, contracts made, the expenditures thereunder or otherwise, and balances of money on hand up to November 1, and the effect of such work," for such of the works in my charge as are embraced in the second district, Mississippi River. The district extends from the foot of Island 40 to the mouth of White River, a distance of 175 miles. But a small part of it has been the scene of actual work. The channel works have been confined to the vicinity of Memphis, and with certain levees built in Mississippi and Arkansas constitute all that has been done in the district.

The channel works have been exclusively of the type known as revetment, or structures designed to prevent the caving of the banks. They have been carried on under the official designations of Memphis Harbor and Memphis Reach.

MEMPHIS HARBOR.

The object of this work has been the protection from destruction by the encroachment of a rapidly caving river bank of extensive sites and costly structures, such as warehouses, elevators, cotton compresses, and a valuable paved landing, which, by affording terminal facilities unexcelled by any port on the river, were of marked benefit to the maritime commerce of Memphis, and hence to that of the river at large. As this work is now completed and to all appearances entirely successful, a résumé of its history seems appropriate. Prior to 1873 the portion of the river bank constituting the harbor front of Memphis was comparatively stable. In 1876 it had receded 350 feet and continued to cave at

the rate of 100 feet per annum. The next year, 1877, the engineer officer in charge was directed to make a survey and to report upon the feasibility of affording relief from the impending danger. He submitted a plan for the prevention of further caving by revetting the bank with willow mattresses ballasted with stone. This revetment it was proposed to form of mattresses 130 feet long, 55 feet wide, and 2½ feet thick. They were built at a suitable place, floated to their proper sites, and sunk side by side. The upper end of each was about at low water line and it covered 55 feet of bank for a distance of 130 feet from that line. From the low-water line to that of a stage 10 feet above low water the bank was to be covered with a layer of brush and stone, similar in construction to the later work. Revetment work was then in the earliest stage of its development, and although this was a distinct advance beyond anything previously projected, it possessed several serious defects which are easily observable by comparison with the class of work now considered standard. The project was approved and appropriations aggregating $113,000 were made for its execution in 1878, 1879, 1880, and 1881. After the first season the work began to show signs of weakness and the caving recommenced, but at a few points only and very slowly. The last season's work was devoted entirely to repairs of that previously done, and at its close the whole enterprise was still in a precarious condition.

By a provision of the river and harbor act of August 2, 1882, this work passed into the control of the Mississippi River Commission, and they made an allotment of $25,000 from that appropriation to extend and repair the revetment, as the decline of the preceding flood had revealed a situation still more alarming. In making these repairs the original plan was modified by extending the upper bank protection to high water. The allotment sufficed to do small patches of work at the most urgent points, and only postponed the danger. The river and harbor act of July 5, 1884, contained a provision for the expenditure of $200,000 in the protection of Memphis Harbor. With this sum available, an opportunity was afforded to abandon the old work and plan and begin anew upon the later and more successful methods which had by that time been developed at other points.

The new plan contemplated the protection of the bank by continuous revetment from the mouth of Wolf River to the lower end of the paved levee, a total distance of 7,700 feet. Greater efficiency was secured by extending the subaqueous mattress 150 to 300 feet from low water as against 125 and 130 feet in the old work. Increased stability was obtained by carrying a continuous longitudinal bond through the mattress, so that any part receiving too great strains could transfer the excess to adjacent portions above and below, and avoiding the destruction of the work by successive attacks upon isolated pieces. Economy in construction resulted from a decrease in the thickness of the brushwork, thus reducing the amount of material required to cover a given area.

Operations under the new plan were begun at the end of July, 1884, under unfavorable conditions. The river was considerably above low stage and rising, with much drift running. The first attempt was to build two mats, each 150 feet wide, to be sunk side by side, making a protection 300 feet wide. When these were finished, the strong current and accumulation of drift under the outer one made it manifestly dangerous to try to sink it as originally intended, and it was dropped down and sunk below its companion. A few days later a mat 300 feet wide was begun, and when 700 feet had been built an attempt to sink

it was made. During the operation it tore in two, and the parts were sunk separately. This mishap determined the postponement to a more favorable stage of river of the construction of wide mats, and to give temporary protection a mattress 150 feet in width was laid from Wolf River to Jefferson street, a distance of 4,800 feet, and the corresponding upper bank work put down. Early in November, 1884, the wide mats were resumed, and under the more favorable conditions then prevailing were built and sunk without loss or difficulty from a point 400 feet below Wolf River to the middle of the elevator, a distance of 1,600 feet. Their construction was then interrupted by rising water which put an end to the working season.

The small balance remaining did not justify the resumption of work. There remained to be protected the entire length of the city landing which had been graded and paved by the city at a cost of nearly half a million dollars. Changes in the regimen above had, meanwhile, transferred the maximum strain from the vicinity of the elevator to the upper end of this landing, and it began to yield gradually, the pavement from low to high water affording a measure of protection. That the landing was not destroyed before further funds became available I attribute to the fact that Hopefield Point opposite was at that time receding at a very rapid rate, causing the point of greatest strain on this side to travel down-stream so fast that there was not time to do great damage at any one place.

The river and harbor act of August 5, 1886, contained an appropriation of $56,250 to complete this work. Operations were resumed in October following. As the late beginning made it improbable that the entire landing could be protected before high water, and as the greatest danger was then at the lower end, the usual order of construction was reversed and the work done from the lower end up-stream.

Four mats were laid during the season, leaving but one more to complete the work. The first, or down-stream one, was 285 feet wide, the next 265, and the rest 250.

In September, 1887, the last mat was laid and the protection was thus made continuous for the entire length originally projected.

The last 3,000 feet of this work has been done since the last detailed report, and an itemized statement of expenditures is submitted with this report. This part required no upper bank protection, the pavement of the city landing taking its place. The junction between the two is not so satisfactory as that between the two parts of a full revetment, and some device for improving this connection may be found necessary, though I think not. Should it be so, however, the balance of funds now on hand will suffice to do whatever is required as well as to make all needful repairs for years to come.

The entire work is to-day in as perfect condition as when built, not a stick nor a stone can be seen to be displaced, and not a foot of earth has been lost behind the revetment. The degree of confidence in the work by those most familiar with it may be inferred from the fact that several manufacturing and warehousing concerns on and near the bank have recently erected extensive and costly additions to their buildings. The elevator and compress companies have built out on piles driven through the revetment so as to recover a considerable part of their lost space. The appropriations for the execution of the present project have been $256,250, of which $239,651.35 have been expended. This would make the actual cost of this work about $30 per foot of bank, but this figure is much above the probable cost of future work of the same character. Adequate explanations of the large cost of this particular work

will be found in a perusal of the failures and mishaps chronicled above. Taking the last 3,000 feet as a basis for future estimates, it will be seen from the appended statement that the subaqueous work cost less than $12 per foot of bank. For complete work it has been found, both here and elsewhere, that a subaqueous mat 150 feet wide is 50 per cent. of the total cost. These mats were 250 to 300 feet wide, but assuming that the percentage is no more than for the narrower ones, or 50 per cent. of the whole, we should have the cost of completed work less than $24 per foot.

This is the heaviest and most costly work of its kind ever put down, and it will certainly protect any alluvial bank on the Mississippi River, no matter how difficult. These figures, from actual experience, more than justify a prediction which I hazarded before this last part was done, to the effect that work of this character and strength could be put down for $25 per foot. I am now able to state positively that it can be done for less than $25 per foot, which figure may be assumed as the cost of protecting the few banks of very unusual difficulty which may be encountered. For all ordinary banks the cost will be much less.

The work under the first plan described above was done by Maj. W. H. H. Benyaurd. The final repairs to it were made by Maj. A. M. Miller; the new work to Jefferson street was done by Capt. C. B. Sears, and that below Jefferson street by the writer of this report. During the entire execution of the present project Mr. W. M. Rees has served as assistant engineer in local charge with zeal and ability, which have contributed in no small degree to the success of the work.

MEMPHIS REACH.

This reach extends from the foot of Island 40, 10 miles above Memphis, to Scanlon's Landing, 18 miles below. These 28 miles of river have for several years been characterized by more than average difficulty of navigation, and were for that reason included under the title above given, in the first report of the Commission, as one of the six localities most urgently demanding improvement. In 1882 a comprehensive project for the reach was formulated, and an allotment of $300,000 was made from the appropriation of August 2 of that year, to provide plant and begin the work. Since that time appropriations have not justified the allotment of funds for serious prosecution of the general plan, but the necessary small amounts have been applied as they could be spared, to secure the unity and safety of the work which was undertaken under the stimulus of the more liberal appropriation of 1882.

The work mentioned is the protection of a caving bank in Hopefield Bend, immediately above and opposite Memphis. It was intended to serve the double purpose of preventing the river from leaving the harbor of Memphis and of avoiding certain unfavorable changes of regimen which that caving, if unchecked, would surely have produced in the river below. Since my report for the fiscal year, an allotment of $60,000 has become available for the extension of this work. A project was submitted and approved for the application of this sum to the construction of a standard revetment, from a junction with the foot of the old work down-stream as far as the money would go. Based on the latest experience, the cost was estimated at $20 per foot of bank and arrangements were accordingly made for materials to build 3,000 feet. Work was begun early in September, and up to date 3,000 feet of subaqueous

work has been laid and half that distance of the upper bank work, with such results as to cost as to make it certain that 25 to 30 per cent. more work will be done with this money than was at first thought possible. Prices both of materials and labor are the same as heretofore. This great saving results partly from an unusually favorable season for work, but principally from more rapid progress due to increased experience.

To make this work complete and self-sustaining it should be extended about 2,000 feet below the point which will probably be reached under the present allotment. The old work is in good condition and no losses have occurred in the protected part of the bend, though the rest has been caving continuously and at times rapidly.

LEVEES.

Yazoo Front.—No work has been done on this line since the date of my annual report. At the last meeting of the Commission an allotment of $60,000 was made for a back line from Hushpucana to Malone's Landing, 353 and 357 miles below Cairo, respectively. This allotment was conditioned upon the contribution by the levee district of a sum sufficient to complete the line, estimated to cost $100,000. The conditions of the allotment have been formally accepted by the Levee Board of the Upper Yazoo district. In view of the difficulty of raising the necessary funds during the present fiscal year, which ends February 1, 1888, and the risk attendant upon beginning such an important line, crossing several water-courses, so late in the season, the Board decided to postpone the work until next year and made an appropriation of $7,500 to repair the front line and hold it during the next high water.

White River Front.—At the same meeting of the Commission an allotment of $75,000 was made to rebuild and repair the levee on the White River front from Helena, Ark., down, conditioned upon the contribution of $50,000 towards the work by the Cotton Belt Levee District, No. 1, of Arkansas, or other parties.

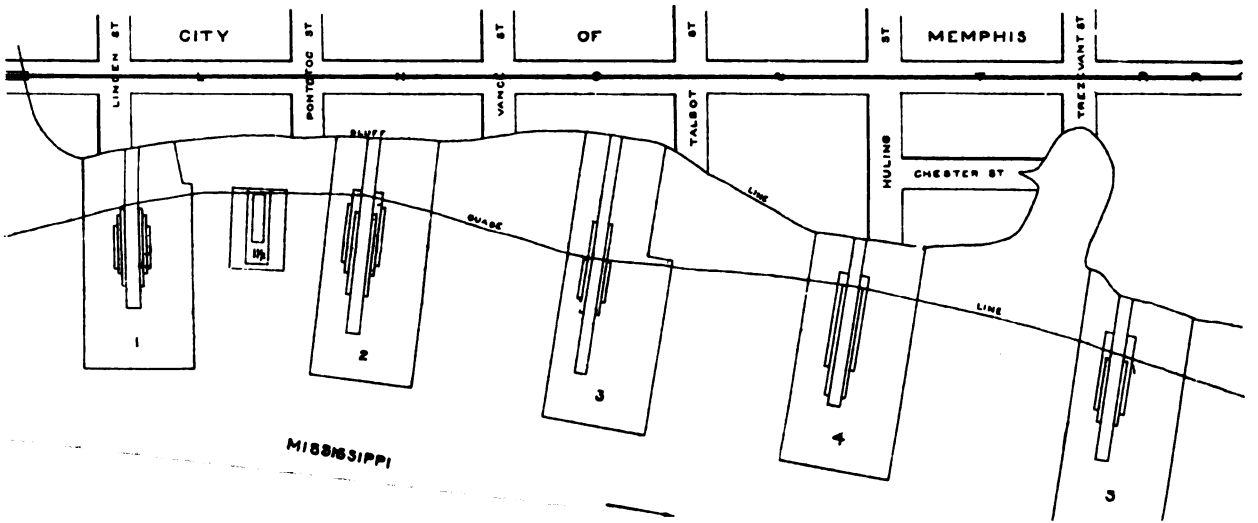
After much delay, resulting mainly from the difficulty of securing the required concert of action among the large owners, many of whom were absent, it was finally decided to proceed under the State laws to assess a tax upon the lands benefited. The necessary valuations and assessments were made, and at a legal meeting held for the purpose a tax of 9 per cent. upon the increased valuation of the lands was voted. Based on the collection of this tax and upon certain individual guaranties, the board was enabled to make a contract at a reasonable price with a prominent and reliable contracting firm. From this firm I received satisfactory assurances that they would put up unconditionally under their contract $48,000 worth of actual embankment. Allowing, as a moderate estimate, $2,000 for the expense of inspection, which is borne by the board, this secures the expenditure of $50,000 as required by the Commission. Bids for the United States work were therefore received.

CITIZENS BLUFF PROTECTION FUND

OF

MEMPHIS, TENN.

SPUR DIKE REVETMENT
DESIGNED & CONSTRUCTED BY
CAPT. SMITH S. LEACH
CORPS OF ENGRS. U.S.A.



CITIZENS BLUFF PROTECTION FUND

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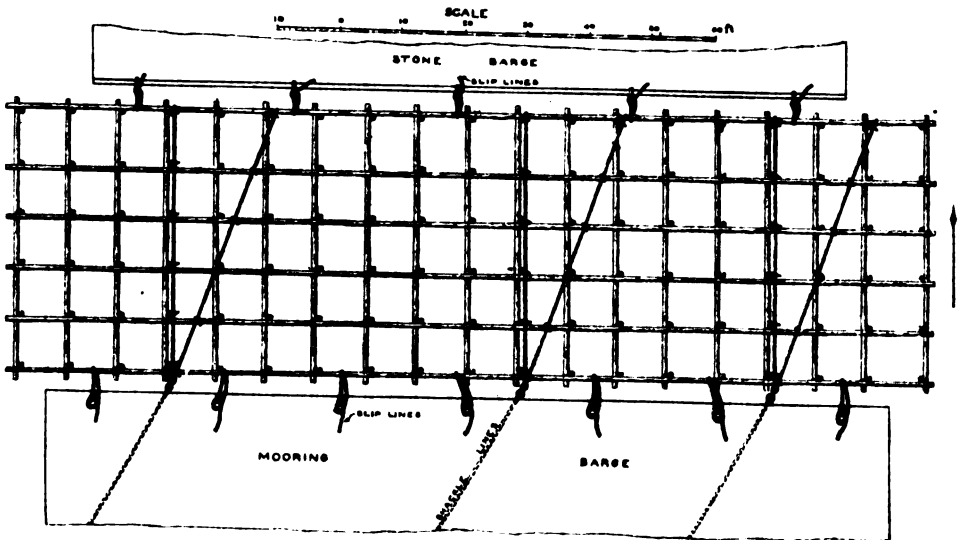


PLAN SHOWING METHOD OF FASTENING LINES TO CRIB WHEN SINKING IT

CITIZENS BLUFF PROTECTION FUND

OF

MEMPHIS, TENN.

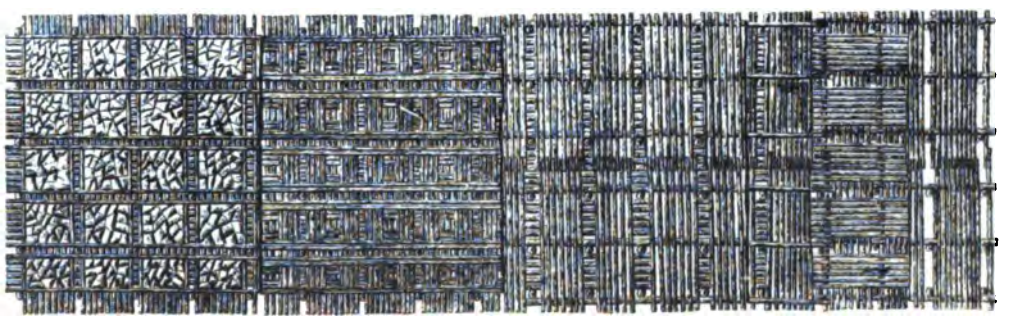
SPUR DIKE REVETMENT

DESIGNED & CONSTRUCTED BY

CAPT. SMITH S. LEACH

CORPS OF ENGRS. U.S.A.

SCALE



PLAN OF CRIB

CITIZENS BLUFF PROTECTION FUND

OF

MEMPHIS, TENN.

SPUR DIKE REVETMENT

DESIGNED & CONSTRUCTED BY

CAPT. SMITH S. LEACH

CORPS OF ENGRS. U.S.A.

SCALE

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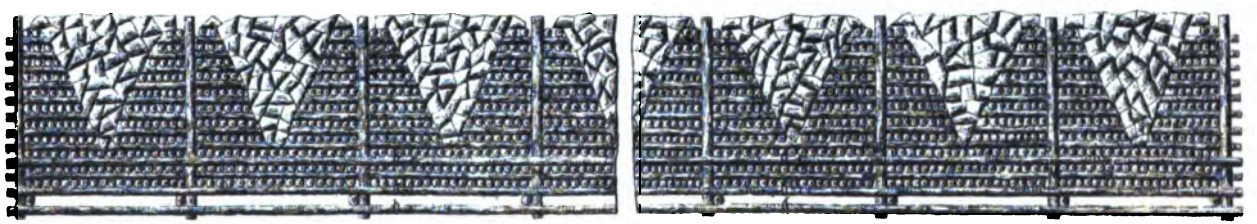
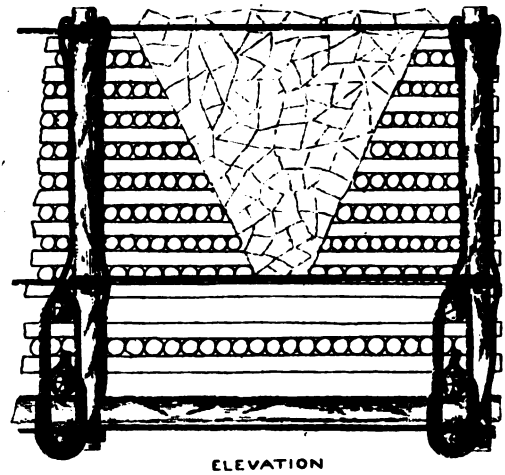


LONGITUDINAL SECTION OF CRIB

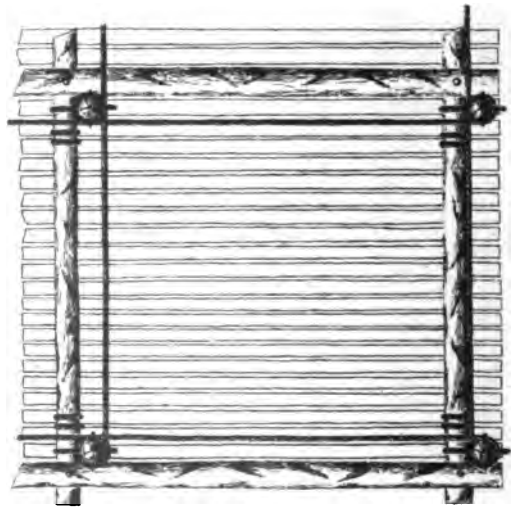
CITIZENS BLUFF PROTECTION FUND
OF
MEMPHIS, TENN.

SPUR DIKE REVETMENT
DESIGNED & CONSTRUCTED BY
CAPT. SMITH S. LEACH
CORPS OF ENGRS. U.S.A.

SCALE



ELEVATION



PLAN

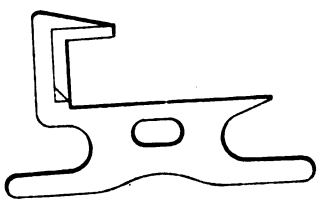
ELEVATION AND PLAN OF ONE SECTION OF GRIB
SHOWING METHOD OF WIRING

CITIZENS BLUFF PROTECTION FUND

OF

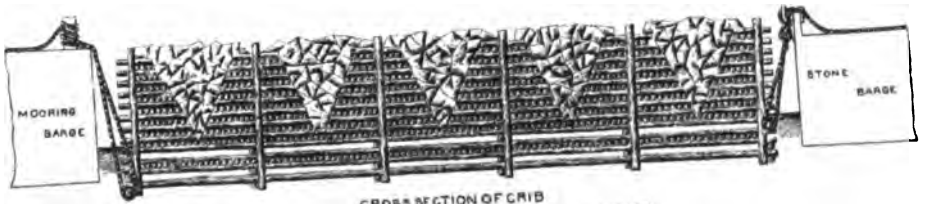
MEMPHIS, TENN.

SPUR DIKE REVETMENT
DESIGNED & CONSTRUCTED BY
CAPT. SMITH S. LEACH
CORPS OF ENGRS. U.S.A.



HOOK CAVIL

SCALE



CROSS SECTION OF CRIB

SHOWING METHOD OF FASTENING LINES TO CRIB AND BARGES

SCALE

he following is an abstract of them:

act of proposals for levee work on levees, White River Front, received in response to ertisement dated October 8, 1887, and opened October 27, 1887, by Captain Smith S. ach, Corps of Engineers, U. S. Army.

Bidders.	Earth-work per cubic yard on Section No. —											Felling timber (per acre.)	Sodding (per square yard.)
	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.		
. Forrest, Memphis, Tenn	....	....	15½	15½	15	....	....	....	....	..	..	$25	...
h Feran, Memphis, Tenn	....	19½	19½	....	....	....	....	....	....	....	....	40	1½c.
iel T. Hartnett, Memphis, Tenn	15	14¾	14¾	15	15	....	....	....	....	....	..	20	1
in-Bambric Con. Company, Saint Louis, o	....	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼	45	1
. Cooney, Memphis, Tenn	16½	15⅞	15⅞	16	16⅞	16⅞	19	19	18	18	20	40	1
nna T. Jefferson, Memphis, Tenn	....	16	16	16	16	16	....	....	....	....	...	40	1
. Arnold and C. F. De Garis, Memphis, enn	....	17	17	19	17	19	28	28	23	23	20	65	1½
Tighe & Co., Memphis, Tenn	16	15½	15½	15½	15½	17	22	22	18	18	20	30	1
tral Constr. Company, Henderson, Ky	....	16	16	17	18	20	....		....	....	...	40	½
McDowell, Memphis, Tenn	....	....	...	....	....	16½	26½	23½	23	21	...	60	1
rver & Sullivan, Memphis, Tenn	....	16	16	16	16	16	...	....	....	....	....	35	¾
K. Jefferies, J. S. Gant, and C. A. Damron, Nebletta, Miss	15¾	15¾	16¾	16¾	17½	17½	....	....	....	....	..	15	1
W. Scott, Memphis, Tenn	....	18½	18½	18½	18½	18½	....	....	...	....	....	40	1
M. Stover, Memphis, Tenn	....	16	....	....	....	....	....	....	....	....	....	....	1

The award was made to the lowest bidder on each section, as follows:
ections 8, 11, and 12 to D. T. Hartnett, at 15 cents.
ections 9 and 10 to D. T. Hartnett, at 14¾ cents.
ection 13 to J. T. Jefferson, at 16 cents.
ections 14 and 15 to J. J. Cooney, at 19 cents.
The average price for the line is 16¼ cents.

Contracts have been made with the parties named, and the line will completed by February 15, 1888.

CITIZENS' BLUFF PROTECTION.

This is practically a continuation by private subscription of the Mem- is Harbor Revetment. It consists of a series of five spur dikes of ish and stone, resting upon large floor mats, to prevent under-cutting. e origin and history of the enterprise and the general plan and early ults of the work are described in full in my annual report. I am now e to present sketches of the general plan and principal details of con- ction, and the present condition of the dikes and bottom. There lso an itemized statement of the cost of the original dikes.

he repairs and extensions of the system mentioned in my last re- t are now in progress. With these finished, it is believed that the tem will be complete and self-sustaining until such time as it will onger be needed.

t will be remembered that the river at this point has not the usual vial bank, but flows at the foot of a bluff nearly 100 feet high. sons growing out of this circumstance induced the substitution here he spur dike for the mattress revetment. The favorable results ob- ied afford an assurance that where the conditions are unfavorable to use of mattress revetment, spur dikes may, at a slightly greater , be relied upon to secure the desired result.

even sketches of the spur dikes, detailed statements of expendi- s for the same, and for Memphis Harbor, and financial statements balance-sheet for all works in the district, accompany this report.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

ENERAL Q. A. GILLMORE,
President Mississippi River Commission.

CITIZENS' PROTECTION FUND.

Statement of expenses for work done on Memphis Bluffs from July 1, 1886, to January 7, 1887.

Items.	Administration.	Care of plant and materials.	General repairs.		Tow-boats and tugs.		Pile-driving.		Revetment.						
									Subaqueous mattress.		Bank mattress.		Grading.	Total revetment.	
	Cost.	Cost.	Amt.	Cost.	Amt.	Cost.	Amt.	Cost.	Amt.	Cost.	Amt.	Cost.	Cost.	Amt.	Cost.
Labor	$1,059.93	$1,683.54		$688.46		$1,975.07		$269.03		$4,196.27		$2,239.58	$482.60		$6,918.45
Subsistence stores						597.06									
Brush ... cords									2,208.6	2,164.43	1,550	1,667.68		3,758.6	3,832.11
Poles ... do									465.5	632.17	145	189.70		610.5	821.87
Stone ... cu. yds									1,997.7	2,188.44	948	1,038.56		2,945.7	3,227.200
Spikes ... pounds															
Iron ... do			545	12.04					650	11.38				650	11.38
Lumber ... feet			4,319	73.67	222	5.95			6,684	94.28				6,684	94.28
Manila rope ... pounds					146	16.79			4,154	465.32				4,154	465.32
Coal ... boxes			320	112.00	4,315	1,555.25	140	49.00							
Hire of tugs						327.50									
Piles ... feet							2,555	166.08							
Miscellaneous	64.73	40.73		106.45		62.08		17.70		110.78					110.78
Furnished by the United States.															
Brush ... cords															
Stone ... cu. yds											242	266.20		242	266.20
Wire ... pounds									18,500	740.00	6,704	268.16		25,204	1,008.16
Wire cables ... do									10,500	459.37				10,500	459.37
Spikes and nails ... do									4,000	104.00	2,700	81.00		6,700	185.00
Iron ... do									385	7.60				385	7.60
Totals	1,124.66	1,726.27		992.62		4,539.70		501.81		11,174.04		5,750.88	482.60		17,407.52
Percentage of cost	2.24	3.44		1.98		9.06		1.00		22.29		11.47	.96		34.72
Work done									3,524.5 squares.		1,112 squares.			1,000 linear feet. 4,636.5 squares.	
Cost per unit									$3.17 per square.		$5.60 per square.			$17.41 per linear ft. $3.76 per square.	

	Amount.	Cost.	Amount.	Cost.	Amount.	Cost.	Amount.	Cost.	Ago.
Labor		$7,301.53		$2,858.01		$10,159.56		$22,756.04	45.35
Subsistence stores								597.06	1.15
Brush ... cords	3,360.7	3,293.48	546	535.08	3,906.7	3,828.56	7,665.3	7,760.67	15.28
Poles ... do	828.65	1,097.18	149	194.98	987.65	1,292.11	1,598.15	2,113.98	4.22
Stone ... cubic yards	2,274	3,587.54			3,274	3,587.54	6,219.7	6,814.54	13.60
Spikes ... pounds	3,000	83.00			3,000	88.00	3,000	83.00	.17
Iron ... do							1,195	23.42	.05
Lumber ... feet							11,225	173.90	.35
Manila rope ... pounds							4,300	482.11	.96
Coal ... boxes							4,775	1,716.25	3.42
Hire of tugs								327.50	.66
Piles ... feet							2,555	166.08	.35
Miscellaneous		155.74				155.74		558.21	1.12
Furnished by the United States.									
Brush ... cords			96	104.64	96	104.64	96	104.64	.21
Stone ... cubic yards			1,220	1,342.00	1,220	1,342.00	1,462	1,608.20	3.21
Wire ... pounds	35,124	1,404.96	7,700	308.00	42,824	1,712.96	68,028	2,721.12	5.45
Wire cables ... do	25,675	1,123.28			25,675	1,123.28	36,175	1,582.65	3.16
Spikes and nails ... do	8,553	248.89	2,000	52.00	10,553	300.89	17,253	485.89	.97
Iron ... do	7,260	153.11			7,260	153.11	7,645	160.71	.32
Total		18,448.70		5,394.68		23,843.39		50,135.97	
Percentage of cost		36.80		10.76		47.56			100.00
Work done	848,120 cubic feet.		155,778 cubic feet.		1,003,898 cubic feet.				
Cost per unit	2.2 cents per cubic foot.		3.5 cents per cubic foot.		2.4 cents per cubic foot.				

SUMMARY.

Total cost of mattress	$21,156.88
Cost per square	4.56
Total cost of cribs	28,979.09
Cost per cubic foot	.029

Statement of cost of work improving Mississippi River (allotment Memphis Harbor) from October 1, 1886, to October 31, 1887.

Item.	Designation.	Administration.	Care of plant and materials.		General repairs.		Tow-boat and tugs.		Subaqueous mattress work.		Total.		Percentage of cost.	Repairs to steamer *Graham*.		Grand total.
			Am't.	Cost.	Am't.	Cost.	Am't.	Cost.	Am't.	Cost.	Am't.	Cost.	Cost.	Am't.	Cost.	Cost.
Labor		$2,801.40		$1,239.16		$687.76		$1,413.90		$8,358.03		$14,500.25	$41.05		$874.87	$15,375.12
Subsistence stores		13.20		52.52		54.32		282.78		400.33		783.15	2.22			783.15
Brush	Cords								5,054.5	5,620.04	5,054.5	5,620.04	15.91			5,620.04
Poles	Cords								765	1,197.50	765	1,197.50	3.39			1,197.50
Stone	Cu. y'ds								4,195	7,073.61	4,195	7,073.61	20.03			7,073.61
Wire	Pounds								3,849.8	1,539.92	3,849.8	1,539.92	4.36			1,539.92
Wire cables	Pounds								1,569.3	697.98	1,569.3	697.98	1.97			697.98
Spikes and nails	Pounds				200	5.00			7,700	207.45	7,900	212.45	.60	600	16.60	229.05
Iron	Pounds				201	4.52	107	2.41	5,477	148.01	5,785	154.94	.43			154.94
Lumber	Feet				3,367	92.98			9,044	150.78	12,411	243.76	.69	8,334	202.03	445.79
Manila rope	Pounds				56	6.27			2,360	264.50	2,416	270.77	.77			270.77
Coal	Boxes		58	29.20	75	30.00	4,582	1,597.30	200	75.00	4,915	1,731.50	4.90			1,731.50
Hire of tugs								168.00				168.00	.47			168.00
Rent		401.88										401.88	1.16			401.88
Advertising and stationery		83.23										83.23	.23			83.23
Furniture		225.60										225.60	.64			225.60
Miscellaneous		70.22		20.71		53.64		158.65		113.60		416.82	1.18		342.13	758.95
Totals		3,595.53		1,341.59		914.49		3,623.04		25,846.75		35,321.40	100.00		1,435.63	36,757.03
Percentage of cost		10.17		3.80		2.57		10.26		73.20						

Work done ..... { 7,856.30 squares. 2,950 linear feet of bank protection.

Cost per unit ..... { $4.52 per square. 11.97 per linear foot.

SMITH S. LEACH,
Captain of Engineers.

Appropriation for improving Mississippi River, Second District.

FINANCIAL STATEMENT.

Balance on hand June 30, 1887, as per last report		$91,958.97
Amounts received since, viz:		
Reallotted by Mississippi River Commission:		
Levees, White River Front	$75,000.00	
Robinsonville Levee, Yazoo Front	60,000.00	
		135,000.00
Total		226,958.97
Expended from July 1 to October 31, 1887:		
On account Memphis Harbor	$13,890.96	
On account Memphis Reach	4,854.05	
On account Memphis Harbor and Reach	304.22	
On account levees, Yazoo, Miss., delta levee district	.50	
On account levees, White River Front	1,995.61	
		21,045.34
Balance October 31, 1887		205,913.63

General balance sheet.

MEMPHIS HARBOR.

Dr.					Cr.
1887. June 30	To balance	$31,012.41	1887. Oct. 31	By amount expended from July 1, 1887, to date	$13,890.96
			Oct. 31	By balance	17,121.45
		31,012.41			31,012.41

MEMPHIS REACH.

1887. June 30	To balance	$60,000.00	1887. Oct. 31	By amount expended from July 1, 1887, to date	$4,854.05
			Oct. 31	By balance	55,145.95
		60,000.00			60,000.00

MEMPHIS HARBOR AND REACH.

1887. June 30	To balance	$864.56	1887. Oct. 31	By amount expended from July 1, 1887, to date	$304.22
			Oct. 31	By balance	560.34
		864.56			864.56

LEVEES, YAZOO, MISSISSIPPI, DELTA LEVEE DISTRICT, UPPER YAZOO.

1887. June 30	To balance	$82.00	1887. Oct. 31	By amount expended from July 1, 1887, to date	$0.50
			Oct. 31	By balance	81.50
		82.00			82.00

ROBINSONVILLE LEVEE, YAZOO FRONT.

1887. July 2	To amount allotted by Mississippi River Commission	$60,000.00	1887. Oct. 31	By balance	$60,000.00

General balance sheet—Continued.

LEVEES, WHITE RIVER FRONT.

1887. July 2	To amount allotted by Mississippi River Commission.	$75,000.00	1887. Oct. 31	By amount expended from July 1, 1887, to date	$1,995.61
			Oct. 31	By balance	73,004.39
		75,000.00			75,000.00

SECOND DISTRICT.

Disbursements made under appropriation for improving Mississippi River, act of August 5, 1886.

[November 1, 1886, to November 1, 1887.]

Contracts made with—	For what made.	Disbursements under contract.	Liabilities under contract.	Total.
G. R. Brickey	Brush and poles.	$2,941.41		$2,941.41
McKee, McLaws & Co	Levee work	53,176.58		53,176.58
Daniel T. Hartnett	do	16,253.04		16,253.04
Geo. Arnold & Co	do	11,838.24		11,838.24
J. J. Cooney	do	12,415.75		12,415.75
C. W. Hunter & Co	Brush and poles.	1,883.70	$4,416.30	6,300.00
Holmes & Stockley	do	1,749.48	4,840.52	6,590.00
Daniel T. Hartnett	Levee work		73,000.00	73,000.00
J. J. Cooney	do			
Joshua T. Jefferson	do			
		100,258.20	82,256.82	182,515.02

Disbursements otherwise than under contract.

For what expended.	By public notice and sealed proposals.	In open market.	Liabilities.	Total.
Material and supplies	$4,766.42	$8,072.76	$6,649.89	$19,489.07
Subsistence supplies	1,818.21	846.35	1,084.05	3,748.61
Services		27,139.62	5,417.80	32,557.42
Miscellaneous		2,241.13	146.93	2,388.06
	6,584.63	38,299.86	13,298.67	58,183.16

SMITH S. LEACH.
Captain of Engineers.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. 55. Part 2.

WORKS ON THE MISSISSIPPI RIVER AT MEMPHIS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the president of the Mississippi River Commission, Plate 2 of the illustrations of Captain Leach's report upon the works at Memphis, to accompany the report of the Mississippi River Commission from July 1 to November 1, 1887.

JANUARY 12, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 9, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter dated the 29th ultimo, from the president of the Mississippi River Commission, inclosing Plate 2 of the illustrations of Captain Leach's report upon the work at Memphis, to accompany the report of the operations of the Mississippi River Commission from July 1 to November 1, 1887, transmitted to the Speaker of the House of Representatives by letter from this Department dated the 3d instant.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

THE MISSISSIPPI RIVER COMMISSION,
PRESIDENT'S OFFICE,
New York, December 29, 1887.

SIR: I have the honor to transmit herewith Plate 2 of the illustrations of Captain Leach's report upon work at Memphis, accompanying my letter of December 16.

This plate had been retained for correction.

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers, Bvt. Maj. Gen. U. S. A.,
President Mississippi River Commission.

The SECRETARY OF WAR.
(Through the Chief of Engineers.)

[Indorsement.]

OFFICE CHIEF OF ENGINEERS,
U. S. ARMY,
January 5, 1888.

Respectfully transmitted to the Secretary of War.

The report to which this tracing belongs was sent to the War Department from this office December 22, 1887.

J. C. DUANE,
Brig. Gen., Chief of Engineers.

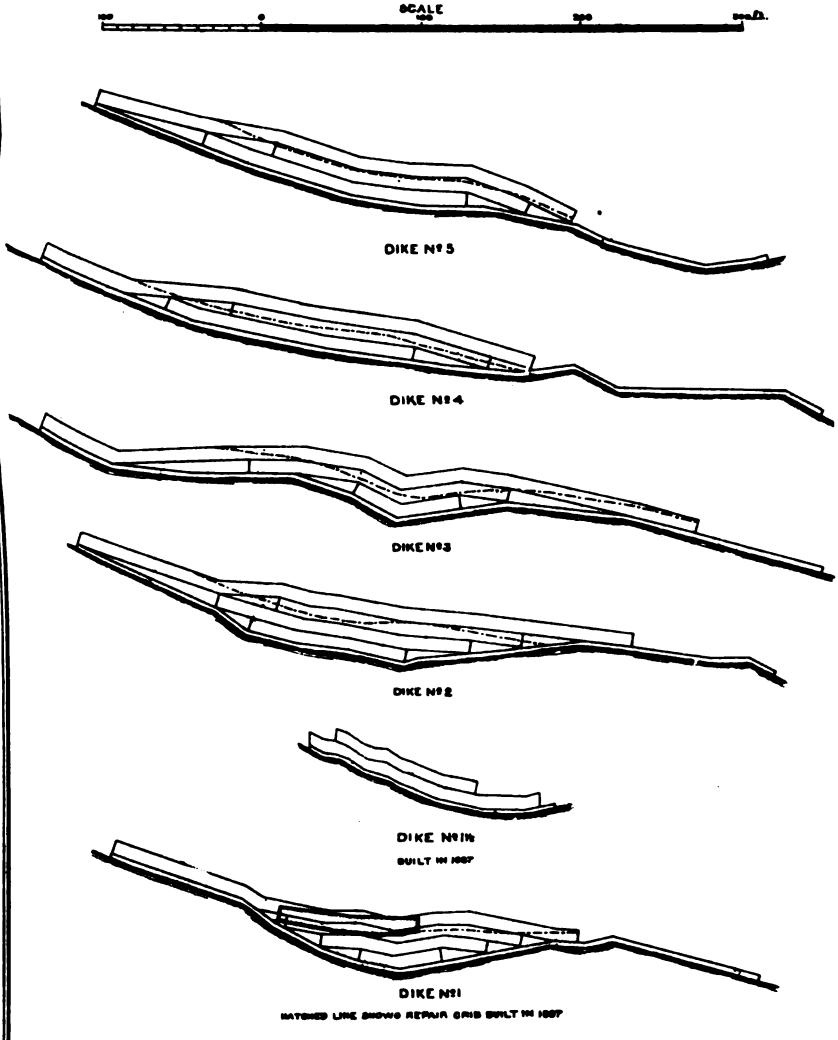
O

CITIZENS BLUFF PROTECTION FUND

OF

MEMPHIS, TENN.

SPUR DIKE REVETMENT
DESIGNED & CONSTRUCTED BY
CAPT. SMITH S. LEACH
CORPS OF ENGR'S. U.S.A.



CROSS SECTION OF DIKES WHEN BUILT

DOTTED LINES SHOW PRESENT LINE OF TOP OF DIKES

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 56.

OCCUPANCY OF AND INJURY TO PUBLIC WORKS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the use, occupancy of, and injury to, public works.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 3, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 24th ultimo from the Chief of Engineers, together with copies of reports from such officers in charge of river and harbor districts as report instances of the use, or the occupancy of, or injury to, public works; the same being transmitted in response to the requirements of section 4 of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 24, 1887.

SIR: Section 4 of the river and harbor act of August 5, 1886, requires of the Secretary of War that he shall "report to Congress all cases in which piers, break-waters, locks, and dams, or other structures or works, built or made by the United States in aid of commerce or navigation, are used, occupied, or injured by a corporation or an individual, and the extent and mode of such use, occupancy, or injury."

With the view of supplying the required information officers and agents, under the direction of this office, were instructed to submit detailed reports covering all facts necessary to enable the Secretary of War to comply with the terms of the act.

Reports have been received from all officers in charge of river and

harbor districts; and I have the honor to submit herewith copies of such of them as report instances of the use, or the occupancy of, or injury to public works.

All other officers state that there are in their districts no such instances to report.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

REPORT OF MAJOR W. R. LIVERMORE, CORPS OF ENGINEERS.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., July 7, 1887.

SIR: Referring to General Orders, No. 6, Headquarters Corps of Engineers, current series, I have the honor to state that there is no structure or work in this district built or made by the United States in aid of commerce or navigation which is used or occupied by a corporation or an individual except the Government wharf in the inner harbor at Block Island, R. I. This is the only wharf on the island available, except in summer, and it is used by the Government and the public in common.

Pursuant to a recommendation contained in the Annual Report of the Chief of Engineers for 1886, a clause was inserted in the river and harbor bill considered during the last session of Congress, providing for the transfer of this wharf to the town of New Shoreham (the corporate name of Block Island), for the public use of said town, but the bill did not become a law.

Very respectfully, your obedient servant,

W. R. LIVERMORE,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT-COLONEL WALTER McFARLAND, CORPS OF ENGINEERS.

ENGINEER OFFICE, UNITED STATES ARMY,
New York, N. Y., July 19, 1887.

GENERAL: Under section 4 of the act of Congress relating to rivers and harbors approved August 5, 1886, I have the honor to report as follows upon the use by corporations or individuals of works built or made by the United States in aid of commerce or navigation in the engineer district of which I have charge.

Very respectfully, your obedient servant,

WALTER McFARLAND,
Lieut. Col. of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

REPORT UPON THE USE, OCCUPATION, OR INJURY BY CORPORATIONS OR INDIVIDUALS, OF PIERS, BREAKWATERS, OR OTHER STRUCTURES OR WORKS BUILT OR MADE BY THE UNITED STATES IN AID OF COMMERCE OR NAVIGATION.

The only instances of this kind in this district are found in connection with the dikes on the Upper Hudson.

1. Miller and Whitbeck have built a dock over 273 feet of the half dike at Mull's Island, on the east side of the river, about 13 miles below the railroad bridge at Albany. The dike just above the dock has been heavily loaded with stone to serve as an ice-breaker, and shows signs of giving way under the weight imposed on it.

This occupation of the dike was authorized by the honorable Secretary of War November 9, 1880, under an opinion of the Judge-Advocate General of the Army.

2. H. Slingerland has built a dock over 103 feet of the Barren Island Dike opposite Coeyman's, on the west side of the river, about 12½ miles below the railroad bridge at Albany. It is not known under what authority this was done.

3. The Knickerbocker Ice Company occupy with their wharf 319 feet of the Roah Hook Dike, on the west side of the Hudson River, about 12 miles below the railroad bridge at Albany, by authority of the Chief of Engineers under the opinion of the Judge-Advocate-General of the Army, before referred to—October 12, 1880.

4. F. E. Bean uses for a dock 259 feet of the Castleton Dike, on the east side of the river, about 9 miles below the Albany railroad bridge. The dike is much broken for about 20 feet above the upper end of the dock. This occupancy is under authority of a grant of lands under water by the State of New York, over which this United States dike is built.

5. E. P. Stimson occupies for dock purposes 280 feet of the Castleton Dike, about 400 yards above the part occupied by F. E. Bean, under approval of the Chief of Engineers dated September 11, 1871. The dock is not now used and has fallen into decay.

6. The Ridgewood Ice Company occupy the lower end of the Cedar Hill Dike, on the west side of the river, opposite Castleton, about 8½ miles below the railroad bridge at Albany, under authority of a grant of lands under water made by the State of New York, upon which this United States dike is built.

7. Sunny Side Ice Company occupy for dock purposes a part of the dike in front of Cow Island, on the east side of the river, about 7½ miles below the railroad bridge at Albany, under what authority is not known.

8. Richard English occupies for dock purposes 203 feet of the Campbell Island Half-dike, on the east side of the river, about 7½ miles below the railroad bridge at Albany, under authority of a grant of land under water from the State of New York, this dike being built over that land.

9. Whitehead Brothers occupy for dock purposes about 25 feet of the Cedar Hill Dike, on the west side of the Hudson River, about 6 miles below the railroad bridge at Albany, under authority of the honorable Secretary of War, dated May 18, 1887.

10. Hotaling and Park (now Knickerbocker Ice Company) occupy a part of the old Beacon Island Half-dike, on the west side of the river, about 3½ miles below the *railroad bridge* at Albany, under what au-

thority is not known. Their occupancy of it has, however, improved it, as they have closed a break which formerly existed in it.

11. John Patterson has built a dock 100 feet long over the old revetment of Beacon Island, on the west side of the Hudson, about 600 yards above Hotaling and Park's ice-house, under approval of the Chief of Engineers, dated December 16, 1881.

12. Paul S. Forbes has built a dock over a part of the Bath Dike, on the east side of the river, about 1½ miles above the lower railroad bridge at Albany, under agreement and bond transmitted to the Chief of Engineers October 28, 1876.

The dock has not been kept in repair and the dike has given way under it.

13. W. H. Forbes has extended the dock built by Paul S. Forbes about 225 feet further north over the Bath Dike. The occupation of this dike was approved by the honorable Secretary of War June 15, 1882.

14. George Mark and others have built a dock over the old revetment of Patroon's Island, on the west side of the river, about 2½ miles above the lower railroad bridge at Albany, extending out into the river about 60 feet beyond mean high-water mark, without any authority other than that derived from the old colonial grant to the patroon.

15. Erastus Corning has occupied for dock purposes 105 feet of the high dike between Hillhouse and Patroon Island, on the west side of the river, about 3½ miles above the lower railroad bridge at Albany, under authority of the Hon. Secretary of War dated June 15, 1882.

16. Corning and Company, under authority of a grant of lands under water from the State of New York, have for some years been filling in with ashes and slag from their works, a strip of this grant running south from their iron works, on the east shore of the river, just below Troy. They have gone outside the limits of their grant in some places, and none of the material dumped having any protection against the action of the current, much of it is carried away, especially during freshets, and is dropped in the channels which have been under improvement by the United States.

17. The Rensselaer Iron and Steel Company have built a dock over the Port Schuyler Dike, on the west side of the river, about 4½ miles above the lower railroad bridge at Albany, under authority of a grant of lands under water made by the State of New York.

The line of their dock is about 25 feet outside of the line of high water on the dike.

Under direction or by permission of the State officers, the dikes have been cut at various times to permit the passage of scows loaded with dredged material to be dumped behind the dikes. Sometimes these cuts are afterwards closed—sometimes not. The authority of the United States over these dikes appears to be disregarded by the State officers.

Respectfully submitted,

WALTER MCFARLAND,
Lieut. Col. of Engineers.

REPORT OF LIEUTENANT GEORGE McC. DERBY, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
New York, November 1, 1887.

GENERAL: In compliance with General Orders No. 6, Headquarters Corps of Engineers, June 1, 1887, I have the honor to report that the

only instances in which structures built by the United States in aid of navigation in my district are used, occupied, or injured by a corporation or an individual are the following:

I.—SOUTH RIVER, NEW JERSEY.

a. Messrs. Sayre & Fisher, brick-makers, have filled in between their property and Dike A of this improvement, and use the dike for a wharf for a length of about 300 feet.

b. About the same length of Dike E is put to the same use by W. F. Fisher, brick-maker.

These parties have been notified that their use of the dikes is unauthorized, and it is their intention to make application for permission to use them on the same conditions as to keeping them in repair that similar permits have been granted on for the use of the dikes in the Hudson River.

II.—RARITAN RIVER, NEW JERSEY.

At Dike A, in "Deep Bend," on this river, a line of narrow-gauge railroad track, communicating with the works of the New York Fire-Brick Company, has been laid across the dike, terminating at a wharf known as Holcomb's Wharf, which has been built along the outside of the dike for a distance of 100 feet, and projecting into the river a distance of 25 feet beyond the line of the dike. Between the railroad track and the wharf about 200 feet of the dike are occupied.

The building of this wharf was approved by Lieutenant-Colonel Gillespie, Corps of Engineers, May 25, 1885.

In this connection I would mention that it is claimed here that where the United States has not obtained from the State in which the structure is built a grant for the land under water on which the structure stands that private parties can at any time obtain such a grant, and that this grant carries with it the ownership of any dike or structure occupying the area granted, as well as any adjoining land which may have been formed by the effect of the dikes on the currents of the stream.

In some cases the dikes and the land they have formed are quite valuable, and if they are to be allowed to pass out of the control of the United States, some proportion of their cost might be recovered by obtaining the grant for the land on which they stand from the State, and then selling them to the highest bidder or leasing them to private parties.

I am not aware whether the claim above referred to is considered good, but considerable trouble in the future might perhaps be avoided by making the title of the United States secure at once, whether by obtaining grants from the State or by Congressional action.

Instances of dikes in my district that have already considerable value as real estate, and will steadily become more valuable, are those at the junction of the north and south branches of the Shrewsbury River, and the one at the mouth of the Passaic River, in Newark Bay.

Very respectfully, your obedient servant,

GEO. McC. DERBY,
Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT-COLONEL HENRY M. ROBERT, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Philadelphia, Pa., December 29, 1886.

SIR: I have the honor to submit the following report, in compliance with General Orders No. 6, Headquarters Corps of Engineers, U. S. Army, November 29, 1886, relative to "all cases in which piers, breakwaters, locks, and dams, or other structures or works built or made by the United States in aid of commerce or navigation are used occupied, or injured by a corporation or an individual, and the extent and mode of such use, occupation, or injury."

The works in this district to which the above would apply are the Ice-Harbor at Marcus Hook, Pa., and Delaware Breakwater Harbor, Delaware.

At Marcus Hook the works of the United States consist of two land piers about 600 feet apart and seven detached piers in the river. Collectively these piers form the ice-harbor at this locality. The upper land pier is used by small steamers running between Philadelphia and points on the river below, in making landings at Marcus Hook for freight or passengers. This use of the pier is without injury to the works of the United States.

The harbor is considerably used during the season of ice in the river by the city ice-boats of Philadelphia, and complaint has been made that during the winter the value of the harbor for the purposes for which it was constructed is seriously interfered with, from its use by the owners of small craft as a permanent winter harbor for their vessels.

At Delaware Breakwater Harbor the works of the United States consist of two detached breakwaters of random stone. The Maritime Exchange of Philadelphia has established a station on the breakwater, with telegraphic communication with the mainland, using the engineer building thereon as quarters. The privilege for such occupancy was granted, with the approval of the Chief of Engineers, under date of July 8, 1885. The station is of great value to the commerce of the Delaware River, and the occupation of the breakwater is without injury to the works of the United States.

Very respectfully, your obedient servant,

HENRY M. ROBERT,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF COLONEL WILLIAM P. CRAIGHILL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., January 6, 1887.

GENERAL: In response to General Order No. 6, series of 1886, from your headquarters, I have the honor to submit the following report:

None of the "piers, breakwaters, locks, and dams, or other structures or works built or made by the United States in aid of commerce or navigation" on any of the rivers and harbors under my charge, have been "occupied by a corporation or an individual."

All of such structures or works have been daily "used" by corpora-

tions and individuals, but only in the way in which they were intended to be used—"in aid of commerce or navigation."

In such use, some injury has been done, but nothing more than that due to the ordinary wear and tear to be expected.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SUPPLEMENTAL REPORT OF LIEUTENANT-COLONEL WILLIAM P. CRAIGHILL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., January 25, 1887.

GENERAL: On further reflection it seems that I should add to my report of January 6, made in compliance with General Order No. 6, series of 1886, from your office, the statement that the United States land at Site 6, Great Kanawha River, abutment side, has been for several years, and without proper authority, crossed by the track of the Kanawha and Ohio Railroad, which extends from Charleston along the right bank of the river to its mouth.

While this is technically a trespass no real injury has thus far resulted to the United States. It is supposed this crossing can only be authorized by Congress.

The company has made many promises to obtain the proper authority, but up to this time I have had no notice of the accomplishment of that object.

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN F. A. HINMAN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Norfolk, Va., December 11, 1886.

GENERAL: In accordance with the provision contained in section 4 of "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," approved August 5, 1886, and promulgated in General Order No. 6, Headquarters Corps of Engineers, United States Army, current series, I have the honor to submit the following report:

The only case known to me in this district is that of the Lambert's Point light-house site in Norfolk Harbor (see accompanying map), which is "used and occupied" to a certain extent by the coal pier of the Norfolk and Western Railroad Company, that extends from the mainland out to the light-house. It is understood that this is done by permission of the proper authority, and that the property is not injured thereby.

Very respectfully your obedient servant,

F. A. HINMAN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF COLONEL Q. A. GILLMORE, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
New York, November 5, 1887.

SIR: In compliance with General Orders No. 6, Headquarters Corps of Engineers, series 1887, on the subject of piers, breakwaters, locks, dams, etc., built or made by the United States in aid of commerce or navigation, and used, occupied, or injured by a corporation or an individual, etc., I have the honor to report as follows, viz:

SAVANNAH HARBOR AND RIVER, GEORGIA.

The works of improvement known as "Cross Tides Dam," "Fig Island Jetty," "Philbrick's Cut Dam," and "Big Gap Dam," all located within a few miles of the city of Savannah, have been repeatedly injured to some extent by the removal of portions of the riprap stone used in their construction. The stone is thrown off the dams by unknown persons to permit the passage of small boats.

ALTAMAHA RIVER, GEORGIA.

The training-wall built by the United States at Beard's Bluff Bar has been damaged by unknown persons, by the removal of riprap stone from the crest, to afford passage for small boats.

The above are the only instances known to me in which works built by the United States in aid of commerce or navigation have been "used, occupied, or injured."

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers,
Bvt. Maj. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN W. M. BLACK, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., July 20, 1887.

SIR: In compliance with General Orders No. 6, Headquarters Corps of Engineers, Washington, June 1, 1887, I have the honor to report as follows, viz:

The small house and wharf erected on the piles over the east jetty at Volusia Bar, St. John's River, Florida, by Mr. Falana, and occupied by him as light-keeper for the steamboat companies, as reported by Capt. William T. Rossell, Corps of Engineers, January 20, 1885, still exists. Since the establishment of Volusia Bar Lights by the United States Mr. Falana has been employed as tender to the range-lights.

No injury has resulted to the works at Volusia Bar by reason of this occupation.

In Saint Augustine, Fla., six wharves, two houses, and three sets of ways for repairing vessels have been built over and against the sea-wall built by the United States in 1841 to 1854. Permits for building some of these wharves, etc., have been issued by the city authorities. Under the law of the United States and of the State of Florida, the

United States owns the riparian rights along the entire length of this wall. No special injury is done to the wall itself by these structures.

Very respectfully, your obedient servant,

W. M. BLACK,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MAJOR A. N. DAMRELL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Mobile, Ala., July 22, 1887.

SIR: In compliance with General Orders No. 6, dated June 1, 1887, I have the honor to submit the following report:

In January, 1883, "Farr Slough," situated about 44 miles above the mouth of Pearl River, Mississippi, and 271 miles below Jackson, Miss., was closed under direction of Maj. Amos Stickney, Corps of Engineers, by driving piles across the head and felling large trees into the slough immediately below the piling, in order to confine all the water of the main river in one channel.

During the months of December, 1884, and January, 1885, Mr. —— Weston, a saw-mill owner, at Logtown, on East Pearl River, removed a number of these piling, cut the balance down to a dead low-water level, and removed the trees felled in below. He also removed, by blasting, the greater part of an island situated at the head of the slough, so as to open a clear channel for running saw-logs to his mill.

Since the opening of this slough by Mr. Weston, that portion of the main river immediately below the slough down to Home's Bayou, a distance of 6 miles, has shoaled considerably, as it is estimated that fully one-half of the volume of water goes through the slough and is lost to that part of the river used for purposes of navigation.

Very respectfully, your obedient servant,

A. N. DAMRELL,
Major Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN SMITH S. LEACH, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., June 21, 1887.

SIR: Referring to General Orders No. 6, Headquarters Corps of Engineers, current series, I have the honor to state that the only work under my charge which is used or occupied by individuals or corporations is the levee on the Plumb Point Reach, which is used by the community generally as a foot-path, by which use no injury is done. A small part of this levee was built on the line of an old turnpike, and this portion is occasionally driven over by persons who have not become acquainted with the new road provided. No appreciable injury has been done as yet by this use, nor is any likely to be.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN WILLIAM T. ROSSELL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 20, 1887.

SIR: In obedience to General Orders No. 6, Headquarters Corps of Engineers, United States Army, Washington, D. C., June 1, 1887, I have the honor to report as follows:

The only public works built or made by the United States in aid of commerce and navigation injured by the people are the levees.

These are used as public roads, and by this means are gradually worn down. Horses, cattle, and hogs are allowed on them, doing much damage, especially the latter.

There are in existence State laws under which these affairs come, but in many cases they are not fully enforced.

Very respectfully, your obedient servant,

WM. T. ROSSELL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MAJOR CHARLES J. ALLEN, CORPS OF ENGINEERS.

ENGINEER OFFICE, UNITED STATES ARMY,
Saint Paul, Minn., July 5, 1887.

SIR: I have the honor to submit the following report, in obedience to General Orders No. 6, Headquarters Corps of Engineers, Washington, D. C., June 1, 1887. The report covers facts to date.

FALLS OF SAINT ANTHONY, MINNESOTA.

The preservation of the Falls of Saint Anthony was undertaken by the United States in 1870, since which time the Government has expended upon this work, including a sluice for the passage of saw-logs, $615,000. The plea for the appropriations was that the destruction of the falls would be followed by destruction of navigation on the Mississippi River above them. There has not been, however, any navigation by steamboats for 76 miles above the falls for several years past. The works constructed by the Government at the falls are:

1. A concrete dike underneath the limestone ledge extending across the river along a line a short distance above the crest of the falls, to cut off seams and strata which might permit the passage of water through the sand-rock underlying the limestone.
2. A timber apron and wing, to prevent the wearing away of the sand-rock at the foot of the falls and consequent recession of the limestone ledge.
3. Two folding dams, designed to maintain during the winter sufficient depth of water upon the limestone ledge to prevent injurious action upon it of frost and ice.
4. A sluice at the west side of the apron for the passage of saw-logs.

The concrete dike and the flooding-dams were completed in 1876, the timber apron and wing in 1878, and the log-sluice in 1879. The appropriations by Congress since 1878 (that for the log-sluice excepted) have been applied in repairing and strengthening the apron and wing.

In the fall of 1881, and during the winter following, one Bassett, of Minneapolis, and others associated with him, deposited large quantities of rock, gravel, and earth in the main channel of the river on the west side and just above the apron. The material thus deposited was at one point 18 feet in height above low water and formed an immense dike, narrowing the channel width by 118 feet. The effect of the deposit was not only to practically block the entrance to the log-sluice, but also to concentrate the flow of water into the easterly angle formed by the apron and wing, the weakest and most exposed point of the works. The floods of the following spring worked great injury to the apron and wing in consequence, and extensive repairs and additions to the defensive works became necessary on the part of the Government.

During the winter of 1881 and 1882 an attempt was made by parties claiming the right to the water-power on the east side of the river to tunnel under what is known as Farnham and Lovejoy's mill-pond at a point about 50 feet below (down-stream from) the United States works, the object being, apparently, to obtain a race under that pond. This attempt was, however, discontinued in consequence of an injunction served at the instance of Farnham and Lovejoy, or by their attorney.

The tunneling, however, progressed far enough to expose a small face of the sand-rock to the action of high water, and the erosion has, since the winter of 1882, caused a recession of the limestone ledge at this point of about 40 feet.

As this recession approaches the United States works the latter are more and more endangered.

As soon as Mr. Bassett's action was discovered he was notified to desist. As he persisted in depositing the material, the case was referred to the Department of Justice, and about the 1st of April, 1882, proceedings were commenced before the United States district court to compel the removal of the material.

After the taking of long and tedious testimony the deposits were finally removed, as required, in the summer and fall of 1883. Mr. Bassett sustained some pecuniary loss in consequence of being obliged to remove the material. Beyond this nothing was done. The United States attorney, in January, 1882, expressed the opinion that no action under the law could be brought against Mr. Bassett further than that necessary to compel removal of the deposits.

This case was reported in the Annual Reports of the Chief of Engineers for 1882 and 1883; also in special letters from this office dated February 11, 1882, and April 30, 1882.

The running of loose saw-logs in large numbers over the apron, instead of through the sluice built for the purpose of receiving the logs in order to save the apron, occurred at different times between 1880 and 1882. The logs were sheered by the Mississippi and Rum River Boom Company into the pond of the Minneapolis Mill Company. From this pond they were to be sluiced over the falls, to be received by the Saint Paul Boom Company. The two companies, it appeared, differed as to the responsibility of driving the logs to the sluice; in consequence, many millions of feet of logs escaped over the apron, grinding and wearing the latter in their descent. In some cases it was claimed that the booms above the falls broke under the pressure of accumulations of logs and of freshets. An injunction was finally obtained from the United States court in March, 1882, restraining the running of logs over the apron, and the agent of the Minneapolis Mill Company shortly afterwards connected the company's pond with the sluice, thus reducing the trouble from the logs. During the summer of 1885, however,

large numbers of logs were turned over the apron. The matter was referred to the then United States district attorney, who, after investigation, appeared to be of opinion that the logs were not intentionally turned over the falls by their owners. During the summer of 1886 some saw-logs were also turned over the apron.

MISSISSIPPI RIVER, ABOVE THE FALLS OF SAINT ANTHONY, MINNESOTA.

From such information as I can gather, it appears that in the spring of 1875 lumbermen cut the brush and stone dams constructed by the Government for the improvement of navigation at the Thousand Islands, near Saint Cloud. The dams were broken through in order to get the logs out of the pockets formed by the dams and islands, that mode of procedure being more profitable to the lumbermen than taking the logs out in any other way.

It also appears from the records of this office that in the spring of 1878 log-drivers committed similar depredations at the dams constructed by the Government at Brown's Island, Haughton's Flats, and Lily Pond Islands. Also, that the drivers pulled down several of the sign-boards placed at these dams, these sign-boards having lettered on them an extract from the act of Congress approved August 14, 1876, prescribing the penalty for such depredations.

The officer in charge, Major Farquhar, represented the matter of the damage to the work at Haughton's Flats to the Department May 21, 1878, and, at the request of the Chief of Engineers, the honorable Attorney-General, on the 3d of June, directed the United States attorney for Minnesota to examine into the matter. It seems that satisfactory evidence could not be produced against the guilty parties.

THE YELLOW BANKS, CHIPPEWA RIVER, WISCONSIN.

During the fall of 1885, or the winter following, some of the timber ties of the protection wall at the Yellow Banks were stolen. Efforts were made to discover the guilty parties, but without success.

Very respectfully, your obedient servant,

CHAS. J. ALLEN,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MAJOR JAMES C. POST, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cincinnati, Ohio, December 14, 1886.

GENERAL: In compliance with General Orders, No. 6, current series, Corps of Engineers, I have to report that so far as can be ascertained there are no "piers, breakwaters, locks, and dams, or other structures built or made by the United States in aid of commerce or navigation used, occupied, or injured by a corporation or an individual" in the district of which I have charge, except upon the Kentucky River at Dam No. 4.

The State of Kentucky, in ceding the five locks and dams upon the Kentucky River to the United States in 1880, reserved the right or

privilege of the Kentucky River Mills to use the water-power at Dam No. 4, which right or privilege was granted the said corporation before the act of cession for ninety-nine years, beginning July 10, 1878. Since this dam has been in the possession of the United States it has been rebuilt, the corporation named bearing the expense of the repairs required, at the same time, on that portion of it where the water is taken from the pool for their benefit. The act of the State of Kentucky granting the privilege provides:

That in the erection of such structures and the construction of such flumes and other appliances the said Kentucky River Mills are to be responsible for any injury to said dam arising therefrom: *And provided further*, That they are not to have or use said water to the prejudice and injury of the navigation of said river, it being distinctly understood that it is the surplus water which can be spared from the dam without injury to navigation that is hereby leased and conveyed.

This company occupies 10 acres of land which formerly belonged to the State of Kentucky, but under the act of cession became the property of the United States, and lies adjacent to the abutment end of the dam. For the privileges granted as stated the company were to pay to the commissioners of the sinking fund of the State $180 annually upon the 1st day of July until the end of the term of the lease. No rental has been collected by the Government since it has had possession of the locks and dams.

Very respectfully, your obedient servant,

JAS. C. POST,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF MAJOR AMOS STICKNEY, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Louisville, Ky., February 4, 1887.

GENERAL: I have the honor to report that there are no known instances of injury by individuals or corporations of structures or works built or made by the United States in aid of commerce or navigation within the district under my charge. There are a number of instances of occupation of ground belonging to the Louisville and Portland Canal as detailed in appended report of Mr. Thos. H. Taylor, superintendent of the canal. The occupation of this ground in no wise interferes with the navigation of the canal.

Very respectfully, your obedient servant,

AMOS STICKNEY,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. THOS. H. TAYLOR, SUPERINTENDENT LOUISVILLE AND PORTLAND CANAL.

LOUISVILLE, KY., *January* 4, 1887.

SIR: Below please find report in answer to your letter and in compliance with provision of the river and harbor act of 1886.

Beginning at the head of the canal, first, a basin on south side canal about 80 feet by 450 feet was excavated and is in use by Byrne and Speed, lying between railroad bridge at Fifteenth street and the upper guard gates of the canal. A coal elevator

at Fourteenth street, 250 by 40 feet, is also built on canal grounds, and is in use by same parties. The right to the occupancy was granted by the Louisville and Portland Canal before it became Government property, and license, since acquired, has been granted and continued by the United States Government or its agents. This is all on the south side. The Louisville Cement Company occupy on north side above the Eighteenth Street Bridge about 100 by 150 feet, on which are erected some frame sheds for storage of staves and heading for the barrels in which is packed the cement, for use of which they pay $30 per year. The company has a narrow-guage road over which is hauled the rock from their quarry above the railroad bridge to their mill in Shippingport, passing a short distance below the Eighteenth Street Bridge along the Shippingport road on canal ground, and has been so used for fifteen years. The Union Cement Company, by license granted by Honorable Robt. T. Lincoln, Secretary of War, November 11, 1884, have the use of a certain lot or parcel of land, lying and situate as herein described, beginning at a point on the north property line of the Louisville and Portland Canal 220 east of a stone in said line common to the Louisville Cement Company and the Union Cement and Line Company, thence at right angles with said property line south 48° 50′ west 70 feet, thence parallel with 70 feet from said property line south 41° 10′ east 145 feet, thence at right angles west 48° 50′ east 70 feet, thence with said property line north 41° 10′ west to the beginning, for use and occupancy of which the said company pay $5 per annum. This license to be subject to withdrawal at any or all times. Both of these companies have a runway over the canal bank to the water by which they load the cement on boats, license for these, granted by Colonel Merrill, Corps of Engineers, United States Army, revocable at any time. The K. and I. Bridge Company Railroad are partly on canal property, around what is known as the Skene property, and occupy some of the canal ground between Thirty-second and Thirty-third streets for piers and trestle-work of bridge, license for use of which was granted by Secretary of War. On the canal land opposite lower basin at the locks is an old building belonging to the canal, which is leased to W. H. Slaughter for $62.50 per annum, and used as pipe works.

Respectfully,

THO. H. TAYLOR,
Superintendent Louisville and Portland Canal.

Major AMOS STICKNEY,
Corps of Engineers, U. S. A.

REPORT OF CAPTAIN JAMES B. QUINN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Duluth, Minn., January 10, 1887.

GENERAL: In pursuance with instructions contained in General Order No. 6, Headquarters Corps of Engineers, Washington, November 29, 1886, I have the honor to report that the only damage to Government piers or other constructions for the benefit of navigation in my district resulting from collisions or other similar causes was a damage valued at about $200, caused by the steam barge *Iron Chief* colliding with the south pier of the Duluth Canal or harbor entrance. From all the information I have been able to collect, this collision appears to have been accidental and due to the vessel refusing to answer her helm in consequence of a current out, deflecting the vessel out of its course.

Very respectfully, your obedient servant,

JAMES B. QUINN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN CHARLES E. L. B. DAVIS, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., June 9, 1887.

SIR: In accordance with General Orders No. 6, Headquarters Corps of Engineers, United States Army. Washington, D. C., June 1, 1887,

relative to section 4 of the act of August 5, 1886, making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes, I have the honor to submit herewith reports upon the use, occupancy, or injury by a corporation or an individual of piers, breakwaters, etc., built by the United States in aid of commerce or navigation at the following harbors under my charge

Marquette Harbor, Michigan; Menomonee, Ahnapee, Manitowoc, and Sheboygan Harbor, Wisconsin.

Very respectfully, your obedient servant,

CHAS. E. L. B. DAVIS,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SHEBOYGAN HARBOR, WISCONSIN.

About 220 feet of the north pier at this harbor is used by fishermen in removing fish from their boats to fish-houses, but without damage to the pier. These fish-houses are situated on the beach that has formed since the piers were built, and rent is paid for their use to the owner of the land. It is understood that the portion of the pier inside of the shore-line was ceded to this owner on condition that it should be kept in repair without expense to the United States.

About 200 feet of the south pier was for many years occupied by the Sheboygan and Fond du Lac (now Chicago and Northwestern) Railroad Company.

It is understood that the railroad company holds a perpetual lease from the city of Sheboygan for this portion of the pier upon the condition of keeping it in repair. It is now in a dilapidated condition, and apparently abandoned by the railroad company. It should be placed in good repair by the local authorities or the railroad company. The United States has not rebuilt the superstructure over this part of the pier, or, so far as known, made repairs to the same.

MANITOWOC HARBOR, WISCONSIN.

The Goodrich line of steamers use the five inner cribs at this harbor for a permanent landing wharf. As the company keeps this portion of the pier in repair, and as these cribs are now entirely within the shore-line, there seems to be no objection to such occupancy by the steamboat company.

AHNAPEE HARBOR, WISCONSIN.

In the river and harbor act of August 5, 1886, there is a proviso that no part of the money appropriated for improving the harbor at Ahnapee shall be expended until the wharfage over the Government piers at that port shall be made free.

The south pier at this harbor is used as a landing dock by the steamboat, which stops there six times a week. The owner of the land on both sides of the harbor piers has a warehouse just in rear of this

pier and makes certain charges for handling freight. These charges are denominated "Ours" on the bills, and it was thought were warehouse and storage charges, and not wharfage, but Mr. C. G. Boalt, the owner of the land and warehouse in question, has asserted distinctly that his charges are for wharfage; so further work at this harbor is at present stopped.

MENOMONEE HARBOR, WISCONSIN.

The Menomonee River Lumber Company have been in the habit, for several years past, of using the south pier at this harbor for storing lumber, which is piled from 12 to 16 feet high, leaving a clear space of about 2 feet in width on the channel side, but projecting many feet beyond the south or lake side of the pier.

The pier is also used for mooring their barges while being made up into tows, the pounding of which does some damage to the piers in rough weather.

This unauthorized and improper use of the south pier was referred to in my annual report for the year ending June 30, 1886, in which I recommend that the Government should suspend further work at this harbor unless the practice was discontinued.

MARQUETTE HARBOR, MICHIGAN.

The Common Council of the city of Marquette passed an ordinance September 4, 1886, establishing harbor limits within which riparian owners were to be allowed to erect docks, wharves, and other structures.

In accordance with instructions of the Department, I made a report upon these harbor limits established by the common council in a letter dated October 18, 1886. This report was to the effect that the lines laid down were injudiciously established, were a serious encroachment upon the available harbor space, and very detrimental to the use of the harbor as a harbor of refuge.

In a report upon this same subject, dated December 13, 1886, I stated:

> George L. Burtis has a lumber wharf at this harbor, built parallel to the breakwater for a distance of 547 feet, with an ell at right angles extending within 60 feet of the breakwater, inclosing an area of six acres adjacent to the shore-end of the breakwater. In addition to this, in summer a log-boom is established inclosing about four acres more, one end of the boom being chained to the snubbing-post of the breakwater. The wharf and boom thus extend along more than one-half of the length of the breakwater.

Since then Burtis has built another dock 412 by 100 feet, 65 feet beyond his lumber wharf, thus further encroaching on the available harbor space.

REPORT OF CAPTAIN W. L. MARSHALL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., January 10, 1887.

SIR: In accordance with the requirements of General Orders No. 6, Headquarters Corps of Engineers, Washington, D. C., November 29,

1886, and of section 4 of the river and harbor act approved August 5, 1886, I have the honor to make the following detailed report for the works in my charge:

I. HARBORS OF RACINE, KENOSHA, AND MILWAUKEE, AND HARBOR OF REFUGE AT MILWAUKEE BAY, WISCONSIN, AND HARBOR OF WAUKEGAN, ILLINOIS.

None of the piers, breakwaters, or other structures built or made by the United States for the improvement of these harbors are used, occupied, or injured by any corporation or individual.

II. FOX AND WISCONSIN RIVERS, WISCONSIN.

Wisconsin River.—No use, injury, or occupancy of the works constructed on the river is made or maintained by indviduals or corporations.

Fox River from Portage to Green Bay, including the Portage Canal.—The works for the improvement of the Fox River create and maintain valuable water-powers at various points where dams have been built by the Government, which powers are used by the companies and individuals.

These water-powers were originally developed under charters to individuals and corporations, granted by the legislature of the State of Wisconsin, and when the various works for maintaining the slack water navigation of the Fox River passed by purchase from the Green Bay and Mississippi Canal Company into the hands of the United States, in 1872, the water-powers created by them were not purchased by the Government, but remained in the possession and use of the owners thereof at the time of the purchase. Since the purchase by the United States many of the works have been rebuilt, but no new water-powers have been created, nor any power then existing increased by raising the height of dams or otherwise. The right to use the water-powers maintained by the works is subject to the requirements of navigation, *i. e.*, only the surplus water not needed for navigation can be taken.

During the past low-water season (1886) the mills taking water from the pools above the Appleton, Kaukauna, and Menasha dams took water in excess of the low-water discharge of the Fox River, thus drawing down the levels of these pools below the crests of their respective dams, much to the injury of navigation, which was nearly entirely destroyed, and to the injury of the dams themselves, by exposing their crests to the air and to consequent decay. A demand was made upon these millers to cease taking water when the levels were reduced to the crests of the dams, which request was disregarded, and on my application, approved by the War Department, the Department of Justice has instituted proceedings in the United States (circuit) court for the eastern district of Wisconsin against the water-power owners at Neenah and Menasha as a test case, to protect the rights of the public and of the United States against this practice of the mills, and to define the limit below which the mills can not take water for hydraulic purposes.

The water is taken from the river and canals by the parties entitled to its use at their own expense, and the flumes, where they cut through the Government works, must be in accordance with plans approved by the United States officer in charge of the works, constructed so as not to injure or endanger the work.

The extent of such use of water-powers maintained by the Government is as follows:

On the Upper Fox there is one flour-mill at Montello, 25-horse power, the power being created by the dam now owned by the Government.

This mill is owned by Mary L. Lewis, and the power is leased from the Green Bay and Mississippi Canal Company.

On the Lower Fox, from Lake Winnebago to Green Bay, there is a large number of mills, a portion of which derive their water-powers from the public works, as follows:

AT MENASHA.

	Horse-power.
Jones & Holbrook, successor to P. V. Lawson, flour-mill	50
Henry Hewitt, jr., successor to Menasha Chair Factory	90
John Schneider, successor to Menasha Manufacturing Company, sash and doors	60
D. T. H. McKennon, successor to Davis & McKennon, Excelsior	80
C. R. Smith, barrels	80
Menasha Wooden Ware Company, pail factory	90
Menasha Wooden Ware Company, saw-mill	206
John Strange, saw-mill	187
W. P. Hewitt & Co., woolen-mill	53
James Little & Sons, machine-shop	19
Webster Manufacturing Company, chairs, hubs, and spokes	90
George Whiting, successor to Gilbert & Whiting, paper	250
Menasha Paper and Pulp Company, mill burnt down (lease)	150
Total at Menasha	1,335

In addition to above, Mr. P. V. Lawson has leased water-power to the Gilbert Paper Company on his canal, left side of the river, of 230 horse-power. The mill is now building.

The water-power is maintained by the dam and canal at Menasha, and was conveyed by the Fox and Wisconsin Improvement Company, a corporation created by the State of Wisconsin, to Charles Doty and Harrison and Curtis Reed, by a contract dated July 24, 1855. "It being the intent and meaning hereof to include all hydraulic rights on the dam and canal above the lock for all purposes, not to obstruct its navigation or impair said canal." The water-powers at Menasha are owned or leased by the successors of the said Doty and Reeds.

AT APPLETON, LEFT BANK OF RIVER.

	Horse-power.
Appleton Paper and Pulp Mill	300
Atlas Paper-Mill	400
Appleton Edison Light Company	35
Tirga Paper-Mill	250
Vulcan Paper-Mill	250
Water-Works Company	50
Total	1,285

This water-power was originally created by a wing-dam, built under the laws of Wisconsin by the riparian owner, Mr. Theodore Conkey. Afterwards, in 1852, when the State of Wisconsin built the upper dam at Appleton across the river, for the purposes of navigation, it was connected with this wing-dam. The present owners derive their title from Mr. Conkey. The power is now maintained by the Government dam.

APPLETON, RIGHT BANK.

	Horse-power.
Atlas Paper Company	700
Do	750
Appleton Boot and Shoe Company	10
Miller & Johnson, hubs and spokes	25
Appleton Electric-Light Company	200
L. A. Peifer & Co., tannery, burnt down	20
Walters & Bauer, toys, burnt down	25
Total	1,730

This power is maintained by the Upper (Government) Appleton Dam and the canal on the right side, and is leased or purchased from the Green Bay and Mississippi Canal Company.

AT APPLETON LOWER DAM.

	Horse-power.
Richmond Brothers, paper-mill, burnt down	150
Pride & Son, successor to John Kose, pulp-mill	400
Baune & Hume, flour	35
Eagle Fork Company, successors to John August	25
Electric Railway Company	200
Total	810

This power is maintained by the Lower Government Dam, and is leased from the Green Bay and Mississippi Canal Company.

AT LITTLE CHUTE.

	Horse-power.
John Verstegen, flour-mill	50

This power is maintained by the dam at Little Chute, and is leased from the Green Bay and Mississippi Canal Company.

AT KAUKAUNA, LEFT BANK.

	Horse-power.
A. L. Smith, successor to Franklin Mills Company, flour-mill	60
Kaukauna Paper Company, successors to H. A. Frambach (leased)	400
Kaukauna Lumber and Manufacturing Company, successor to Janson	50
American Pulp Company, successor to Doan & Hobery	200
Reuter Brothers (not running), hubs and spokes	50
Total	760

This water-power is created and maintained by the dam at Kaukauna, and is leased from the Green Bay and Mississippi Canal Company.

AT KAUKAUNA, RIGHT BANK.

	Horse-power.
Milwaukee, Lake Shore and Western Railway shops	80
Joseph Klein, flour	40
Bradner, Smith & Co., pulp-mill	400
Lind & Carlson, machine-shop	25
Badger Paper Company, paper and pulp mill	800
Total	1,345

This power is obtained partly from that created by the Kaukauna Dam, but mainly from the works of the Kaukauna Water Power Company, which is the successor to the Fox River Hydraulic Manufacturing Company, chartered under the general laws of Wisconsin, April 26, 1872.

AT LITTLE KAUKAUNA.

S. S. Clark, saw-mill, who had 25 horse-power in 1884, has his flume closed by an embankment.

This water-power is created by the dam at Little Kaukauna, and is leased from the Green Bay and Mississippi Canal Company.

AT DE PERE.

	Horse-power.
Arndt Bros. & Donseman, flour-mill	100
J. E. Dunham, flour-mill	100
Electric Light Company, successors to Novelty Manufacturing Company	25
Strenfield & Co., pump shop	25
H. Collette, owned by C. R. Merrill, shingle-mill	60
Fox River Iron Company, shut down	100
J. S. Monroe, burnt down, saw-mill	40
Gow & Co., not running	25
Total	475

This power is maintained by the dam at De Pere and by private parties. It is held under grant from the legislature of the State of Wisconsin, approved February 9, 1850, to Joshua F. Cox and his heirs and assigns forever, upon certain conditions as to the construction and maintenance of the lock, dam, and canal at the rapids at De Pere. The individual powers were purchased or leased from Cox and his successors.

As already stated, the Government or the public had suffered no injury up to July, 1886, and had been at no expense on account of these water-powers. They are held subject to the rights of navigation, but it appears that mill owners refuse to acknowledge the decision of the officer in charge as to what the relative rights of the water-power companies and water-users and the public are. The mode, extent, and circumstances of the use of the water-powers for industrial purposes, as far as affects the interests of the Government and of the public in the navigation of the Fox River, will probably be authoritatively decided by the United States courts in the pending suit against the water-power users at Neenah and Menasha.

The owners of the water-powers under the State charter are inclined to sell or lease water privileges in excess of the low-water discharge of the Fox River, throughout the pools created by the dams on the Fox River, and can only be restrained in this vicious practice by legal process.

A copy of the bill in equity* of the United States against the Winnebago Paper Company *et al.* accompanies this report.

Very respectfully, your obedient servant,

W. L. MARSHALL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MAJOR THOMAS H. HANDBURY, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Chicago, Ill., December 24, 1886.

GENERAL: To comply with General Orders No. 6, Headquarters Corps of Engineers, United States Army, November 29, 1886, I have

*Omitted.

the honor to report as follows concerning the piers, breakwaters, etc., built by the United States in aid of commerce or navigation, and used, occupied, or injured by corporations or individuals.

The only work of the above nature now in my charge that will come within the purview of this order are certain of the piers in and about the mouth of Chicago River that have been built from time to time in aid to commerce and navigation. The conditions in relation to these are essentially the same as when reported upon by Major W. H. H. Benyaurd, December 19, 1884.

I inclose herewith a tracing showing the location and extent of the piers built by the United States that are now occupied or used by corporations or individuals, with the names of the parties so occupying or using them. To catch the eye conveniently these cribs are tinted yellow.

Prior to 1833 the Chicago River approached the lake near the present Illinois Central Railway lands, thence it turned south, and formed an outlet fully half a mile from its present mouth. The first improvement was commenced that year by making a cut through the sand-bar that had been formed by the action of the waves produced by the northerly winds. This cut gave a straight outlet into the lake. About the same time a pier was constructed on the north side, beginning at a point on the line which is now the center of Pine street, and was about 1,000 feet in length. A pier was also constructed upon the south side of the river parallel to that upon the north side, a portion of which, however, was afterward removed and replaced by a crib structure further back. The two lines were continued eastward into the lake from time to time as appropriations were made therefor. East of the light-house on the north pier a portion of the crib-work was built by the city of Chicago. At some period the Illinois Central Railroad was allowed to cut through the south pier and construct slips A, B, and C, as shown upon the tracing.

During all these years the process of accumulation has been going on behind these piers, and by various processes much valuable land has become available for commercial and manufacturing purposes. A large amount of capital is invested here in these interests. The shore-line has moved far into the lake and the natural features of the situation entirely changed.

EXTENT OF CRIB-WORK OCCUPIED.

The crib-work on the north side of the river is entirely occupied by corporations and individuals, except the easterly 170 feet, which was built by the United States in 1859 for the foundation of the light-house. Commencing at the western end, the following is a list of occupants and the length of frontage occupied:

Occupants.	Occupations.	Extent.	Owners of adjacent land.
		Feet.	
Kirk & Company	Soap manufacturers	332	Kirk.
Brazil and Chicago Coal Company.	Coal	329	McCormick estate.
		125	Producers' Marble Company.
Pushtigo Lumber Company	Lumber	538	The land occupied by these firms is leased from the Chicago Canal and Dock Company.
C. J. L. Meyer	do	400	
John I. Cullerton	Coal	152	
David Wylie	do	152	
Rathborne, Son & Co	Stove warehouse	58	
Fuller, Warren & Co	do	77	
Fitz Simons & Connell	Lumber	380	

On the south side the United States crib work, on the westerly end for a distance of 270 feet, has been partially replaced by a substantial stone dock, with fender piling, built by the city of Chicago; thence easterly to Slip A the United States work has been reinforced by piling backed with sheeting.

The following is a list of occupants and the length of frontage occupied:

Occupants.	Occupations.	Extent.	Remarks
		Feet.	
Goodrich Steamboat Company		500	Owned by city of Chicago and Michigan Central Railroad.
Illinois Central	Railroad	219.5	
Do	do	121	
Do	do	148	
Lumber yards		257	Leased to occupants by the Illinois Central Railroad Company.

The remaining portion of this south pier is reserved, as noted upon the tracing, for Government use. It is devoted generally to the storage of stone that is to be used for filling cribs.

The superstructure of these occupied cribs is, with the exception of one or two places, in need of general repairs, but the substructure, so far as I can ascertain, is in good condition, and there is every reason to believe that if let alone it will remain so for an indefinite time.

As an aid to navigation this work has accomplished well the object for which it was constructed, and since it is backed up by land now occupied by permanent buildings and industries it will continue to subserve this purpose equally as well as when first built, irrespective of the condition of the superstructure. No amount of money spent upon repairs to the superstructure of these cribs will be of any benefit to navigation in Chicago River. If the parties owning the abutting land and using these cribs desire the superstructure to be repaired in and of their own interests and industries, they should be permitted to do this in their own way and at their own expense.

The portion of the south pier reserved for Government use will before long need some repairs. This of course should be done at the Government expense.

Very respectfully, your obedient servant,

THOS. H. HANDBURY,
Major, Corps of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORTS OF LIEUTENANT-COLONEL O. M. POE, CORPS OF ENGINEERS.

1.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 13, 1886.

SIR: Referring to section 4 of "An act making appropriations for the construction, repair, and preservation of certain public works on rivers and harbors, and for other purposes," approved August 5, 1886, and in accordance with directions conveyed by General Orders No. 6,

Headquarters Corps of Engineers, November 29, 1886, I have the honor to make the following report, viz:

At only two of the works committed to my charge are "piers, breakwaters, locks, and dams or other structures or works built or made by the United States in aid of commerce or navigation" * * * "used, occupied, or injured by a corporation or by an individual." * * *

(1) *At St. Mary's Falls Canal*, the water supply of the village of Sault Ste. Marie is taken by means of a pipe through the pier on the south side of the canal, near the western end, under permission granted by a revocable license dated December 8, 1885, signed by the Secretary of War.

By a revocable license dated July 31, 1886, the Secretary of War granted to the Board of Water Commissioners of the village of Sault Ste. Marie permission to lay water-mains through a certain portion of the grounds pertaining to St. Mary's Falls Canal.

(2) *On Saginaw River.*—The works at Carrollton have frequently been injured and partially destroyed by fire, caused by sparks from passing steam vessels, which use pine slabs for fuel and are unprovided with spark-catching devices.

The pier at Crow Island is often used by the boom companies and private parties as a mooring place for temporary storage of rafts of logs. An actual damage to the pier itself by reason of such use and occupation is not apparent, but the navigable channel opposite the pier is obstructed during such occupancy to the extent of the width of the rafts.

I am, sir, very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

2.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., August 8, 1887.

SIR: In compliance with the provisions of section 4 of the river and harbor act, approved August 5, 1886, I have the honor to report that the only cases in my district where "piers, breakwaters, locks, and dams or other structures or works built or made by the United States in aid of commerce or navigation are used, occupied, or injured by a corporation or by an individual," have occurred at St. Mary's Falls Canal.

First, use.—By permission of the War Department, the northwestern pier of the canal is used by the Sault Ste. Marie Bridge Company as a landing place for materials required in the construction of the bridge next referred to.

Second, occupation.—The Sault Ste. Marie Bridge Company, by virtue of authority granted by the Secretary of War, under section 2 of an act entitled "An act to authorize the construction of a railroad bridge across the Sainte Marie River," approved July 8, 1882, has entered upon the right of way across the canal and grounds, and is constructing the bridge provided for.

Third, injuries.—On October 15, 1886, the steam-barge *Smith Moore*, bound up, ran into the lower gate of the lock of 1881, while the lock

was emptying, there still being a head of about three feet in the lock-chamber.

The boat pushed the gates open and forced her bow some 40 or 50 feet beyond the miter-sill, the result being to break the fastenings of one of the gate cables, warp the north leaf of the gate so that when afterwards closed the gate would not miter at the top by about 10 inches, start the tenons at the heel and toe posts, and injure three of the straps and ties.

When the gate was closed the water pressure due to the rising head in the lock chamber as it filled forced the distorted gate into position again, and the slight repairs to the iron work were quickly made, the whole cost not exceeding $30.

The injury arose from error on the part of the engineer of the barge, who misunderstood the correctly-given signals of the captain and turned the engine ahead when he had been signaled to back.

I am, sir, very respectfully, your obedient servant,

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MAJOR L. COOPER OVERMAN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cleveland, Ohio, January 12, 1887.

GENERAL: In compliance with General Orders No. 6, Headquarters Corps of Engineers, United States Army, Washington, D. C., November 29, 1886, I have the honor to submit the following report:

MONROE HARBOR, MICHIGAN.

The bank of the United States Canal at this harbor is occupied by the Monroe Fishing-club houses. There are two or more buildings belonging to this club. There are also two fish-houses and two ice-houses, belonging to individuals, on the bank of the United States Canal. The occupation and use of said bank of canal is without permission, as far as records of the office show, but no especial injury to United States property is occasioned by the occupancy.

Would respectfully suggest that all parties trespassing be compelled to obtain written permission to so occupy the United States Canal bank, and be subject to the orders of "engineer in charge" of the harbor.

TOLEDO HARBOR, OHIO.

The United States has not built any "piers, breakwaters, or other structures" in aid of commerce or navigation for this harbor, hence there can not be occupancy or use of same by individuals or corporations.

SANDUSKY CITY HARBOR, OHIO.

Similar case to that at Toledo Harbor.

PORT CLINTON HARBOR, OHIO.

Piers, etc., built at this harbor by the United States are not used or *occupied* by any corporation or individual. Considerable trouble has

been occasioned, at times, by parties removing sand (for sale) from off the narrow sand-beach which separates the river from the lake, at the inner end of the west pier. The parties removing the sand have permission from the owners of the beach.

It is respectfully suggested that some action of Congress should be had to protect the junction of piers, etc., with the shore or defining the right of the United States to control said beaches, which, in most instances, are the result of structures built by the United States for the improvement of the harbor.

* * * * * * *

CLEVELAND HARBOR, OHIO.

Piers and breakwaters *are* occupied and used both by individuals and corporations.

East Pier.—Occupied, in part, by the tracks of the Cleveland and Pittsburgh Railway Company, by special act of Congress, approved August 14, 1876, by which act the railroad company were to have use of and occupy part of said east pier, provided the railroad company should keep the pier in good condition.

It is respectfully suggested that the pier is not kept in good condition by the Cleveland and Pittsburgh Railway Company.

West Pier.—Occupied and used by club-houses of the "Gardner Canoe Club," of Cleveland, Ohio. Permission given by the honorable Secretary of War.

Occupied and used by Mr. Samuel Law, of Cleveland, Ohio, with boat-houses, where pleasure boats for fishing and rowing, etc., are kept for hire. Have so occupied and used part of said west pier for a number of years (over eight years). No record of any permission as to a sort of "squatter privilege," or by sufferance at first, which possession has strengthened.

The keeper of the "Life-Saving Station," which is located on the west pier, has constructed a dwelling-house and boat-house, where boats may be rented for pleasure. Permission given to erect said extra building by Col. John M. Wilson, Corps of Engineers (the then officer in charge), in October, 1882. Fishing boats land at or near the said boat-houses and give much annoyance at times, with unloading and dressing of fish.

Whilst these boat-houses, etc., which occupy and use the said west pier, do not materially injure said pier, their occupancy is a precedent for other parties who desire to get a foothold, and the trespassers already there make every effort to increase their privileges (?).

I would respectfully suggest that *all* parties now occupying this pier be given to understand that they are *trespassing*, be compelled to obtain permission to occupy and use said pier, and to be subject, in all respects, to the orders of "the engineer in charge" of the harbor.

Breakwater—Shore-arm.—On beach, near inner end of shore-arm, a boat-house, for hire of pleasure boats and sale of refreshments, was erected in the spring of 1884. Parties claim to have rented privileges of the owner of the land, but one of the houses is certainly on pile of riprap stone placed by the United States for protection of the junction of breakwater and shore. Their occupancy and use do not materially injure the breakwater, but it is an encroachment upon United States property which may become hereafter very objectionable. They should be placed subject to the orders of "the engineers in charge." The lake arm of the breakwater is not used or occupied in any way. It will,

pier and makes certain charges for handling freight. These charges are denominated "Ours" on the bills, and it was thought were warehouse and storage charges, and not wharfage, but Mr. C. G. Boalt, the owner of the land and warehouse in question, has asserted distinctly that his charges are for wharfage; so further work at this harbor is at present stopped.

MENOMONEE HARBOR, WISCONSIN.

The Menomonee River Lumber Company have been in the habit, for several years past, of using the south pier at this harbor for storing lumber, which is piled from 12 to 16 feet high, leaving a clear space of about 2 feet in width on the channel side, but projecting many feet beyond the south or lake side of the pier.

The pier is also used for mooring their barges while being made up into tows, the pounding of which does some damage to the piers in rough weather.

This unauthorized and improper use of the south pier was referred to in my annual report for the year ending June 30, 1886, in which I recommend that the Government should suspend further work at this harbor unless the practice was discontinued.

MARQUETTE HARBOR, MICHIGAN.

The Common Council of the city of Marquette passed an ordinance September 4, 1886, establishing harbor limits within which riparian owners were to be allowed to erect docks, wharves, and other structures.

In accordance with instructions of the Department, I made a report upon these harbor limits established by the common council in a letter dated October 18, 1886. This report was to the effect that the lines laid down were injudiciously established, were a serious encroachment upon the available harbor space, and very detrimental to the use of the harbor as a harbor of refuge.

In a report upon this same subject, dated December 13, 1886, I stated:

> George L. Burtis has a lumber wharf at this harbor, built parallel to the breakwater for a distance of 547 feet, with an ell at right angles extending within 60 feet of the breakwater, inclosing an area of six acres adjacent to the shore-end of the breakwater. In addition to this, in summer a log-boom is established inclosing about four acres more, one end of the boom being chained to the snubbing-post of the breakwater. The wharf and boom thus extend along more than one-half of the length of the breakwater.

Since then Burtis has built another dock 412 by 100 feet, 65 feet beyond his lumber wharf, thus further encroaching on the available harbor space.

REPORT OF CAPTAIN W. L. MARSHALL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., January 10, 1887.

SIR: In accordance with the requirements of General Orders No. 6, Headquarters Corps of Engineers, Washington, D. C., November 29,

1886, and of section 4 of the river and harbor act approved August 5, 1886, I have the honor to make the following detailed report for the works in my charge:

I. HARBORS OF RACINE, KENOSHA, AND MILWAUKEE, AND HARBOR OF REFUGE AT MILWAUKEE BAY, WISCONSIN, AND HARBOR OF WAUKEGAN, ILLINOIS.

None of the piers, breakwaters, or other structures built or made by the United States for the improvement of these harbors are used, occupied, or injured by any corporation or individual.

II. FOX AND WISCONSIN RIVERS, WISCONSIN.

Wisconsin River.—No use, injury, or occupancy of the works constructed on the river is made or maintained by indviduals or corporations.

Fox River from Portage to Green Bay, including the Portage Canal.—The works for the improvement of the Fox River create and maintain valuable water-powers at various points where dams have been built by the Government, which powers are used by the companies and individuals.

These water-powers were originally developed under charters to individuals and corporations, granted by the legislature of the State of Wisconsin, and when the various works for maintaining the slack water navigation of the Fox River passed by purchase from the Green Bay and Mississippi Canal Company into the hands of the United States, in 1872, the water-powers created by them were not purchased by the Government, but remained in the possession and use of the owners thereof at the time of the purchase. Since the purchase by the United States many of the works have been rebuilt, but no new water-powers have been created, nor any power then existing increased by raising the height of dams or otherwise. The right to use the water-powers maintained by the works is subject to the requirements of navigation, *i. e.*, only the surplus water not needed for navigation can be taken.

During the past low-water season (1886) the mills taking water from the pools above the Appleton, Kaukauna, and Menasha dams took water in excess of the low-water discharge of the Fox River, thus drawing down the levels of these pools below the crests of their respective dams, much to the injury of navigation, which was nearly entirely destroyed, and to the injury of the dams themselves, by exposing their crests to the air and to consequent decay. A demand was made upon these millers to cease taking water when the levels were reduced to the crests of the dams, which request was disregarded, and on my application, approved by the War Department, the Department of Justice has instituted proceedings in the United States (circuit) court for the eastern district of Wisconsin against the water-power owners at Neenah and Menasha as a test case, to protect the rights of the public and of the United States against this practice of the mills, and to define the limit below which the mills can not take water for hydraulic purposes.

The water is taken from the river and canals by the parties entitled to its use at their own expense, and the flumes, where they cut through the Government works, must be in accordance with plans approved by the United States officer in charge of the works, constructed so as not to injure or endanger the work.

perhaps, be attempted by vessel men when the harbor of refuge is completed.

* * * * * * *

In conclusion I would respectfully suggest that it would be advisable if Congress should take some action, in a general act, giving the engineer in charge of any United States improvement some definite and fixed power to regulate the improper use of piers, breakwaters, etc.

Very respectfully, your obedient servant,

L. COOPER OVERMAN,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN F. A. MAHAN, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Buffalo, New York, November 1, 1887.

SIR: In compliance with General Orders No. 6, Headquarters Corps of Engineers, series of 1887, and with your letter of October 28, 1887, I have to report that the north pier at the mouth of Buffalo Creek is occupied by the Delaware, Lackawanna and Western Railway Company, for the use of their coal-pockets and tipples.

While the occupancy of the pier in this way does not inflict any directly apparent injury on the pier, still these structures are of such a nature as seriously to interfere with repairs that may be needed at any time and will be needed before very long, greatly increasing the cost of, and the time required in making such repairs.

The occupancy of this pier by the railway also seriously interferes with work going on under the auspices of the United States, as has been very well shown during the present summer and fall with the work going on at the breakwater.

The United States does not possess a single square foot of unoccupied ground convenient of access by water, except the banquette of the south pier, in the harbor of Buffalo. During the operations of the present summer and fall, the only place that could be found available for the storage of material was a pier belonging to the State of New York. This pier was used through the courtesy of the officials of the Erie Canal, but with the understanding that it *must be vacated on demand.* The pier was inconvenient of access, and it made necessary a double handling of all material arriving by rail, which would have been avoided had the United States been in possession of its own property.

If operations are to be continued on the breakwater during future seasons the use of a landing like this pier will be more and more necessary.

While the occupancy of the pier belonging to the State of New York did answer for the present season (in a certain way), it would not be sufficient for work on a large scale owing to lack of space for storage purposes, and it would be necessary for the United States to obtain, probably at great cost, a place suited to the demands of the work, while having a piece of property easily worth from $20,000 to $25,000 a year, if rented for a term of years, in its possession.

While the presentation of the above facts may not be just such as may be required by section 4 of the river and harbor act of August 5, 1886, it seemed to me proper to show how the interests of the United States

suffer from the occupancy of a piece of its own property from which it obtains no return or compensation whatever.

Very respectfully, your obedient servant,

F. A. MAHAN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF CAPTAIN CARL F. PALFREY, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Oswego, N. Y., November 11, 1887.

GENERAL: In compliance with General Orders No. 6, current series, Headquarters Corps of Engineers, I have the honor to report the following occupation and injury of United States harbor works under my charge.

AT OSWEGO, NEW YORK.

December 10, 1886.—Extension of light-house pier was damaged by collision of steamer *Baltic* under stress of weather; four courses of timber on channel face were broken in, and the deck-plank secured to them were displaced and broken. Damage was repaired December 12–16, at a cost for material and labor of $92.08.

December 12, 1886.—Light-house pier extension damaged by collision of steamer *Bell Wilson* under stress of weather; three courses of timber on channel face were damaged and deck-plank displaced and broken. Damage was repaired December 13–16, at a cost for material and labor of $100.75.

September 12, 1887.—East breakwater damaged by collision with unknown vessel. Timber displaced and split and deck-plank started. Damage was repaired September 13, at a cost for material and labor of $7.60.

AT CHARLOTTE, NEW YORK.

In 1885 or 1886 the Ontario Beach Improvement Company rebuilt superstructure over about 600 feet of the old west pier within the present shore-line, as a revetment of the river front of lands leased by them, and have since occupied this as a private dock.

They have not held this as private property as against the United States, but complaints have been made through this office to the War Department of their so holding it as against private parties.

A chain ferry plying between the east and west piers, within the shore-line, authorized by the honorable the Secretary of War, May 24, 1873, is kept open during the summer.

A ferry plying between the east and west piers outside the shore-line was authorized by the honorable the Secretary of War, June 11, 1883. It is understood to be discontinued.

No other occupation or injury of United States harbor works under my charge is known to me.

I have the honor to be, very respectfully, your obedient servant,

CARL F. PALFREY,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF COLONEL GEORGE H. MENDELL, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
San Francisco, Cal., June 14, 1887.

SIR: I have to report in regard to works under my charge, that no piers, breakwater, or other structures built by the United States in aid of commerce or navigation are used, occupied, or injured by a corporation or by an individual, except that near the in-shore ends of both jetties of Oakland Harbor, California, a little injury has been done by fishermen in removing the top of the stone work so as to enable them to pass small fishing-boats, and save the distance required to pass around the outer ends of the jetties.

Very respectfully, your obedient servant,

G. H. MENDELL,
Colonel, Corps of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 57.

SURVEY OF SAVANNAH RIVER.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, the report of a survey of Savannah River from Cross Tides, above Savannah, to the bar.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 7, 1888.

The Secretary of War has the honor to transmit to the House of Representatives, in compliance with the provisions of the river and harbor act of August 5, 1886, a letter, of the 4th instant, from the Chief of Engineers, together with a copy of a report and accompanying map from Col. Q. A. Gillmore, Corps of Engineers, giving the results of a survey of Savannah River, Georgia, from Cross Tides, above Savannah, to the bar, and also a copy of the preliminary examination of the same, as provided by the above-mentioned act.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 4, 1888.

SIR: I have the honor to submit herewith a copy of a report to this office, with accompanying map, from Col. Q. A. Gillmore, Corps of Engineers, giving the results of a survey of Savannah River, Georgia, from Cross Tides, above Savannah, to the bar, with a view of obtaining 28 feet of water in the channel, made, under his direction, to comply with the requirements of the river and harbor act of August 5, 1886, together with a copy of the preliminary examination of the same, as therein provided.

Colonel Gillmore states that in the project submitted it is assumed that the provision of the act calls for a channel having a central high-

water depth of 28 feet and a navigable depth of 25 to 28 feet, depending upon winds and tides, and that the accomplishment of this object requires not only the construction of certain works between the sea and the city, which he describes, but also higher up, in order that an ample basin for the flood tide may be obtained; and he estimates the total aggregate cost, including engineering and contingencies, at $6,660,000.

Should the project meet with the favorable consideration of Congress, the sum of $600,000 could be advantageously expended during the fiscal year ending June 30, 1889, in the prosecution of the work.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF SAVANNAH RIVER FROM CROSS TIDES, ABOVE SAVANNAH, TO THE BAR, WITH A VIEW TO OBTAINING TWENTY-EIGHT FEET OF WATER IN THE CHANNEL.

UNITED STATES ENGINEER OFFICE,
New York, November 29, 1886.

GENERAL: By Department letter dated September 27, 1886, I was informed that the river and harbor act of August 5, 1886, provides that a preliminary examination should be made of "Savannah River from Cross Tides, above Savannah, to the bar, with a view to obtaining 28 feet of water in the channel," Georgia, and that this examination had been assigned to my charge. I was also instructed to report, after completing the examination, whether the river is considered to be worthy of improvement, in which case a survey would be ordered to be made.

Until now the work of improving Savannah River and Harbor, Georgia, has been carried on with a view of increasing the depth of water in said river and harbor, from the bar up to the city, to 22 feet, and widening the channel of the river opposite the city to 600 feet of uniform depth with the balance of the channel. The appropriations made by Congress for this purpose aggregate at present $1,032,000, of which the sum of about $882,000 has been expended to the present date. Work has lately been resumed by means of the last appropriation of $150,000 made by the act of August 5, 1886.

When operations were suspended last time the improvement had progressed so far that vessels drawing from 20 to 21 feet could proceed from the city to the bar at a single tide. There is a reasonable prospect that the required depth of 22 feet can be established at the estimated cost given in my last annual report. This depth is that which the bar actually affords.

The question appears to be simply this, whether Savannah Harbor is of sufficient importance to warrant the outlay of a large sum of money for the purpose of increasing the depth of the channel across the bar and through the river to the city wharves to 28 feet, a project which would embrace extensive and costly works on the outer bar. The character of the works between the bar and the city must also be materially changed, and the changes required will necessarily be expensive. The reason for this is that the tidal section of Savannah River will need to be, in great measure, canalized in order to maintain the greatest channel depth of which it is capable, and yearly dredging will be probably necessary.

The importance of Savannah has been, in my opinion, unequivocally recognized by Congress through the liberal appropriations thus far made

for improving its harbor. An enlargement of the existing project, so as to secure a depth of 28 feet, instead of 22 feet, will undoubtedly very greatly increase the commerce of the port, since vessels of much greater draught could reach its wharves. Savannah may be considered at this time to be the most important port of the United States on the South Atlantic coast; it is now the second cotton port of America, and it stands first in the world in naval stores. The shipment of lumber has largely increased. Complaint is made by steamship companies that their vessels habitually can not carry off all the freight consigned to them on account of being limited in draught. It is claimed by parties apparently conversant with the subject that only sufficient depth of water is needed to make Savannah a most desirable shipping port for the products of the Western grain States. If it should be found practicable to obtain permanently a depth of 28 feet in the river and on the bar, Savannah would not only gain vastly in commercial aspects, but would also serve as a convenient harbor of refuge for a large number of vessels.

For the reasons here briefly stated, I consider Savannah River as being worthy of improvement, and recommend that the sum of $3,000 be allotted for making a survey of the river.

The report of my assistant, First Lieut. O. M. Carter, Corps of Engineers, is herewith submitted.

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers,
Bvt. Maj. Gen., U. S. A.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF LIEUTENANT O. M. CARTER, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Savannah, Ga., November 22, 1886.

COLONEL: In compliance with your instructions of the 8th instant, I have the honor to submit the following report of an examination of the "Savannah River from Cross-Tides above Savannah to the bar with a view to obtaining 28 feet of water in the channel."

The Savannah River has been so fully described in your various annual reports from 1873 to 1886, inclusive, and especially in those for the years 1873, 1880, and 1882, that no further description is at the present time considered necessary.

About 3 miles above the upper limit of the city of Savannah the river is divided by Hutchinsin's Island into two branches; one flowing past the city, called Front River, and the other flowing next to the Carolina shore, called Back River. The stream connecting these two is called Cross-Tides, and the examination directed extends from this point down Front River to the sea, a distance of about 27 miles. There is no commerce above the city limits requiring any improvement of the river in that direction for purposes of deep-water navigation, and I assume that any work to be executed there will simply be that necessary to complete the scheme of improvement lower down. The depth of water in the bar has, it is reported, not sensibly changed in a century, and vessels drawing 22 feet have no difficulty in crossing it in calm weather at ordinary high water. The project according to which all work upon the river under the direction of the Engineer Department has up to the present time been done aims at securing a channel depth from the city to the sea of 22 feet at mean high water. The cost of this improvement was estimated at $1,212,000. The appropriations to date aggregate $1,032,000, and about $882,000 have been expended. When the improvements were begun in 1873, the deepest high-water draught was less than 17 feet, the usual draught being about 14½ feet. At the close of active operations last year vessels drawing from 20 to 21 feet were able to go from the city to the sea on a single tide.

As the depth of the water in the river has been increased, deeper draught vessels have been built and new lines of steamers established, yet the commerce of the port has so much increased during this period that the present depth of water is no more adequate to the present needs than were depths of from 14 to 17 feet fourteen years ago.

There has been a steady growth of both the foreign and domestic trade of Savannah, until at present it is the largest port of the South Atlantic coast, the second cotton port of America, and the chief naval stores port of the world. The net cotton receipts of this port for the year ending September 1, 1886, were over 12 per cent. of the total crop, and were greater by 75,272 bales than those of the previous year, this increase being greater than at all the other Atlantic ports combined. The receipts of naval stores were much greater than in the preceding year, reaching a total of 127,785 casks of spirits of turpentine and 476,508 barrels of rosin; 42,183 tons of pig-iron were carried by the Ocean Steamship Company of Savannah as against 32,178 tons the previous year. This rapidly growing trade is solely dependent upon the harbor improvements executed here, and but for them could never have been begun. The shipments of lumber exceeded those of the preceding year by over 3,500,000 feet. While the amount of freight carried, both foreign and coastwise, was a great deal greater than during the preceding year, both the tonnage and number of foreign vessels were less, and as the depth of water continues to increase this change will be still more marked, and the reduction of freight rates due to this cause will be greater and greater. Mr. Conner, the president of the Savannah Cotton Exchange, estimates that the reduction in rates of freight and insurance, due to the improvements already executed here, is at least 25 per cent.

I submit the following letters and extracts:

LETTER FROM OCEAN STEAMSHIP COMPANY OF SAVANNAH.

SAVANNAH, GA., *November* 16, 1886.

DEAR SIR: * * * There are nine large steamers plying to New York, Boston, and Philadelphia, making from twenty-one to twenty-five departures from here every month. There is also an important Baltimore service. * * * These steamers are now leaving behind every week not less than 1,000 tons of freight that they could carry from their docks if they had sufficient water.

These leavings are accumulated here.

Second. A very large development of the business is apparent in the immediate future. Direct rail connections to the growing center of the mineral enterprises, Birmingham, are being rapidly constructed. Between Birmingham and Memphis the rails are being uninterruptedly laid, and the early completion of these lines at once places this port at the shortest distance from Kansas City, of whose importance as a great distributor of western products you do not need to be reminded. The business thus close in the future can not be carried off from this port without a greatly increased depth of water. My opinion is that it will justify reaching to a depth of 28 feet at mean high tide. While such a navigation would be more than necessary for the ships now plying, it is yet sure that they will be insufficient (they are already taxed to their utmost) for the business clearly and surely before us, and it is equally sure that if 28 feet depth can be reached and maintained ships for domestic commerce will be at once constructed to make use of it, and that a class of foreign vessels never hitherto coming to this port will be wanted for the unquestioned growth of business that I refer to. There can be no doubt as to this desideration for water to move the business so nearly on us from Kansas City and Birmingham.

Third. From the first-named point we can naturally look for much grain, and the necessary terminal facilities are ready here for it. An elevator of great capacity and cost now stands idle and dead on our wharves for want of deep water to carry out grain-laden vessels. * * *

I am not able to give you exact comparison for years back, but it may interest you to know that for the year ending August 31, 1884, the New York steamers alone carried out of this port 109,601 tons miscellaneous cargo, and for the year ending August 31, 1885, 142,952 tons; one year's increase. Their carrying within the past ten years has been quite trebled in tonnage, and there is seemingly no good reason to doubt that in the next decade this ratio of increase will, with adequate water, be maintained. The increase of tonnage shown by my figures relating to the New York line of steamers has been and will be fully shared by those plying to Philadelphia, Boston, and Baltimore.

Yours, very truly,

G. M. SORREL,
Agent.

Lieut. O. M. CARTER,
Corps of Engineers, U. S. A.

LETTER FROM THE PRESIDENT OF THE SAVANNAH COTTON EXCHANGE.

SAVANNAH, GA., *November* 10, 1886.

DEAR SIR: * * * I hand you herewith a statement of the cotton business of the port for the commercial years 1872 to 1876, inclusive, made up from the records of the exchange.

You will observe that notwithstanding the very great decline in value of cotton—*say about 50* per cent.—within the past fifteen years, that the volume of exports has

so greatly increased that the aggregate value for the past seven years has been fully equal to that of the preceding seven years. The improvements made in the river and harbor, in deepening, straightening, and marking the channel, have had the effect of admitting vessels of greater carrying capacity and of making navigation less difficult. This has caused freight and insurance rates to be very much reduced—just how much it is imposible to say, as other causes have also operated in the same direction, and have, no doubt, had their effect, but I would suppose at least 25 per cent. It is still more difficult to estimate the effect upon competing routes. The resources of the country tributary to Savannah are large and, to a great extent, undeveloped, though the process of development is steadily going on, and, I think, will be greatly increased as the river and harbor is improved. The railroad lines having their termini here have been and are extending their main lines and constructing branch roads, giving each year increased facilities and lower rates for bringing business to the port.

Very respectfully, your obedient servant,

H. M. CONNER,
President Savannah Cotton Exchange.

Lieut. O. M. CARTER,
Corps of Engineers, U. S. A.

LETTER FROM A. MINIS & SONS, SHIPPING MERCHANTS.

SAVANNAH, GA., *November* 23, 1886.

DEAR SIR: We would call your attention to the importance of having more water in our river. * * * In many cases we have to lighter to Tybee, which is expensive and slow. If we could get a draught of water in our river of 26 feet, we could bring to this port steamers of so much greater size that we would have a material reduction of freights, and, besides, be able to export grain and other dead-weight cargoes. The saving to the people of this section by obtaining increased water facilities would be incalculable. The same state of things now exists here as did in New Orleans before the improvement of the Mississippi, and should our river be deepened to the same extent we are quite certain that the tonnage at this port would be doubled.

Hoping that you will call the attention of the proper authorities to the above facts,

We are, dear sir, yours, very truly,

A. MINIS & SONS.

Lieut. O. M. CARTER,
Corps of Engineers, U. S. A.

Exports of upland and sea island cotton from the port of Savannah, Georgia, and values per bale.

Year ending August 31—	Exports, foreign.		Exports, coastwise.		Upland, value per bale.	Sea island, value per bale.	Total exports, upland and sea island.	Total value.
	Upland.	Sea island.	Upland.	Sea island.				
	Bales.	*Bales.*	*Bales.*	*Bales.*			*Bales.*	
1872	294, 443	1, 355	158, 553	4, 084	$74. 00	$137. 00	458, 435	$34, 266, 847
1873	373, 730	2, 165	241, 978	6, 774	97. 00	178. 00	624, 647	61, 314, 818
1874	426, 099	3, 472	222, 073	4, 489	72. 50	98. 25	656, 133	47, 774, 638
1875	420, 881	2, 354	190, 041	5, 557	70. 50	118. 25	618, 833	44, 005, 476
1876	368, 844	1, 374	165, 898	5, 493	60. 00	106. 75	541, 609	32, 817, 572
1877	290, 821	1, 138	192, 352	4, 733	52. 00	96. 50	489, 044	25, 691, 547
1878	348, 302	2, 937	258, 054	8, 450	51. 25	80. 50	617, 752	31, 993, 123
1879	469, 110	1, 786	233, 012	6, 500	46. 00	77. 50	701, 408	32, 525, 777
1880	423, 296	796	303, 779	10, 730	51. 00	100. 00	738, 601	38, 233, 425
1881	502, 234	5, 561	374, 832	9, 640	53. 00	101. 00	892, 267	48, 019, 799
1882	336, 488	2, 137	394, 833	15, 404	53. 25	88. 50	748, 862	40, 495, 221
1883	418, 385	613	394, 658	11, 442	50. 00	93. 00	825, 098	41, 773, 265
1884	358, 150	1, 649	296, 345	7, 606	49. 00	124. 00	663, 750	33, 221, 875
1885	389, 290	1, 568	317, 874	17, 515	48. 50	99. 25	726, 247	36, 191, 441
1886	400, 437	1, 483	383, 316	21, 307	47. 00	86. 50	806, 543	38, 807, 726

E. F. BRYAN,
Superintendent Savannah Cotton Exchange.

SAVANNAH, GA., *November* 8, 1886.

COMMERCIAL STATISTICS.

Arrivals and clearances of vessels and commerce at Savannah, Georgia, from January 1, 1873, *to December* 31, 1885.

ARRIVED.

Years.	Coastwise.			Foreign ports.						Total.		
				American vessels.			Foreign vessels.					
	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.
1873	463	381, 595	11, 934	34	16, 140	383	213	119, 316	2, 999	710	517, 051	15, 316
1874	418	354, 700	10, 048	66	41, 030	847	284	182, 517	4, 232	768	578, 247	15, 127
1875	370	310, 877	10, 102	67	39, 298	781	222	145, 748	3. 290	659	495, 923	14, 173
1876	355	320, 015	10, 348	58	40, 832	987	260	169, 649	3, 865	673	530, 496	15, 200
1877	333	379, 826	10, 867	54	40, 948	951	287	168, 247	3, 950	674	589, 021	15, 768
1878	322	385, 532	10, 688	61	45, 208	1, 576	326	235, 787	5, 814	709	666, 527	18, 078
1879	319	411, 794	8, 235	30	21, 994	439	279	198, 040	3, 960	628	631, 828	12, 634
1880	338	446, 881	9, 996	14	7, 724	170	244	172, 224	3, 533	596	626, 829	13, 699
1881	383	508, 422	11, 069	21	10, 729	237	254	151, 463	3, 474	658	670, 614	14, 780
1882	391	544, 448	12, 605	11	4, 865	106	204	115, 061	2, 718	606	664, 374	16, 429
1883	380	468, 226	10, 659	10	4, 115	90	160	87, 025	1, 965	550	559, 366	12, 714
1884	388	482, 917	13, 735	14	5, 632	116	287	174, 676	3, 964	689	663, 225	17, 835
1885	395	493, 610	14, 622	12	5, 058	125	251	163, 321	3, 416	658	661, 989	18, 163

CLEARED.

1873	466	398, 050	13, 749	65	30, 102	689	224	129, 164	3, 194	755	557, 316	17, 632
1874	480	407, 295	12, 748	71	40, 397	822	229	145, 038	3, 437	780	592, 730	17, 007
1875	319	284, 831	9, 376	72	39, 311	804	195	128, 086	2, 924	586	452, 228	13, 104
1876	410	361, 999	11, 222	80	49, 483	1, 163	185	119, 699	2, 827	675	531, 181	15, 212
1877	400	439, 370	12, 081	65	44, 829	1, 066	161	103, 342	2, 589	626	587, 541	15, 736
1878	378	418, 958	10, 475	64	40, 128	1, 255	260	183, 757	5, 375	702	642, 843	17, 105
1879	365	442, 734	8, 834	36	24, 891	497	223	156, 470	3, 129	624	624, 095	12, 460
1880	310	434, 864	10, 108	26	12, 536	271	242	168, 255	3, 446	578	615, 655	13, 825
1881	369	508, 422	11, 458	22	13, 052	253	261	180, 579	3, 745	652	702, 053	15, 456
1882	350	506, 213	11, 917	23	9, 155	205	209	135, 375	3, 023	582	650, 743	15, 145
1883	355	415, 720	9, 780	10	4, 115	90	165	87, 400	2, 015	530	507, 235	11, 885
1884	360	452, 802	13, 363	15	5, 634	131	288	194, 075	4; 315	663	652, 511	17, 809
1885	414	502, 773	14, 672	20	8, 722	148	228	154, 858	3, 344	662	666, 353	18, 164

Commerce.

Years.	Value of exports.	Value of imports.	Duties collected.	Years.	Value of exports.	Value of imports.	Duties collected.
1873	$29, 850, 275. 00	$890, 664. 00	$160, 011. 77	1880	$49, 297, 981. 25	$660, 974. 00	$78, 458. 41
1874	50, 500, 945. 94	788, 220. 00	110, 492. 74	1881	47, 448, 117. 00	952, 512. 00	356, 550. 22
1875	46, 004, 295. 60	511, 818. 00	61. 625. 44	1882	48, 349, 033. 00	657, 255. 00	61, 148. 70
1876	41, 336, 581. 00	511, 528. 00	58, 163. 36	1883	50, 890, 937. 00	567, 182. 00	65, 245. 34
1877	33, 569, 981. 00	564. 937. 00	34, 959. 93	1884	50, 934, 184. 00	696, 434. 00	49, 147. 28
1878	41, 793, 477. 71	505, 596. 00	23, 364. 35	1885	42, 253, 397. 11	513, 386. 00	45, 162. 40
1879	44, 980, 070. 89	378, 782. 00	27, 778. 73				

Comparative table of receipts of cotton, naval stores, etc., for the years 1885 *and* 1886.

Articles.		Year ending August 31, 1885.	Year ending August 31, 1886.	Increase.
Cotton	bales	726, 247	806, 543	80, 296
Rosin	barrels	452, 370	476, 508	24, 138
Spirits turpentine	casks	111, 447	127, 785	16, 338
Lumber	feet	66, 979, 014	70, 532, 016	3, 553, 002
Timber	do	288, 088	149, 493	.....
Rice	bushels	795, 739	535, 850	.....
Pig-iron	tons	32, 178	42, 183	10, 005

I assume that a depth of 28 feet will admit without difficulty vessels of from 25 to 26 feet draught. So far as the cotton trade alone is concerned vessels drawing 24 feet will answer all purposes; but those vessels, when grain laden, or when carrying coal or iron in addition to their cotton cargoes, need more water. Even in the cotton-carrying trade the increased competition made possible by deep water will have the effect of reducing rates of freight.

The total foreign and coastwise exports of this port for the calendar year 1885 amounted to $42,253,397.11 and the total commerce to over $67,000,000. The amount of business done during the year is estimated at over $95,000,000.

From the foregoing I am of the opinion that the Savannah River is worthy of improvement from "Cross-Tides, above Savannah, to the bar, with a view to obtaining 28 feet of water in the channel"; and I respectfully recommend that the sum of $5,750 may be allotted for the purpose of making the necessary surveys, etc.

Very respectfully, your obedient servant,

O. M. CARTER,
First Lieutenant, Corps of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. A.

SURVEY OF SAVANNAH RIVER FROM CROSS-TIDES, ABOVE SAVANNAH, TO THE BAR, WITH A VIEW TO OBTAINING TWENTY-EIGHT FEET OF WATER IN THE CHANNEL.

UNITED STATES ENGINEER OFFICE,
New York, October 12, 1887.

GENERAL: Section 6 of the river and harbor act approved August, 5, 1886, provides that the Secretary of War should cause an examination or survey, or both, to be made, and the cost of improvements to be estimated, "at Savannah River, from Cross-Tides, above Savannah, to the bar, with a view to obtaining 28 feet of water in the channel." This work was assigned to my charge by Department letter of September 27, 1886; the allotment of funds for the purpose was made March 16, 1887, and I have the honor to submit the following report:

Under my direction a survey, as complete as could be made with the limited amount of funds which the Department could apply to the purpose, was made by my assistant, First Lieut. O. M. Carter, Corps of Engineers. Additional data, greatly to be desired, could not be obtained, owing to the large area to be covered with the available funds.

SUMMARY OF PREVIOUS OPERATIONS.

During the last fiscal year operations for improving Savannah River and Harbor were carried on in conformity to the general plan submitted with my report of August 28, 1873, and to the supplementary projects of March 19, 1879, and January 16, 1882.

The object of these several plans, as finally adopted, was to establish a navigable channel from Tybee Roads to the city of Savannah, practicable at high tide for vessels drawing 22 feet of water (corresponding to the available depth on the bar), the north channel from the head of Elba Island down being preferred. This was to be accomplished by the construction of certain specified closure-dams, wing-dams, and training-walls, widening the water-way at the city front, and deepening, widening, and straightening the channel by dredging at various points at and below the city.

The plans were intended to secure and maintain, at a total estimated cost (including land damages) of $1,212,000, a channel having a bottom width of 125 feet and a low-water depth of 15 feet, from Tybee Roads to the city of Savannah.

This work has been practically accomplished. Vessels drawing 20 and 21 feet now navigate the river, while a considerable sum of the amount estimated remains to be expended.

The details of the projects and operations above referred to are fully set forth in my reports for the fiscal years ending June 30, 1873, 1879, and 1882 to 1887, inclusive.

THE PROJECT NOW SUBMITTED.

In calling for a project for improving Savannah River and Harbor, to increase the depth of water from the bar up to the city to 28 feet, as provided for in the act of August 5, 1886, it is assumed that a channel having a central high-water depth of 28 feet and a navigable depth of 25 to 28 feet, depending upon winds and tides, was meant, and the accomplishment of this object requires not only the construction of certain works between the sea and the city, but also higher up, as far as Drakie's Point, in order that an ample basin for the flood tide may be obtained.

The locations where each work is believed to be needed may be enumerated as follows:

1. Drakie's Cut.
2. From Cross-Tides to Fort Oglethorpe.
3. From Fort Oglethorpe to the oyster-beds.
4. From the oyster-beds to Tybee Roads.
5. From Tybee Roads to the sea.

1. DRAKIE'S CUT.

About 160,000 cubic yards of dredging will be here required to increase the area of the tidal basin.

2. FROM CROSS-TIDES TO FORT OGLETHORPE.

The distance from Cross-Tides to the upper part of the city of Savannah is about 3 miles. There is no commerce above the city which would warrant any considerable outlay for dredging, but in order to facilitate the tidal flow a considerable quantity of dredging should be done in this reach, and a portion of King's Island should be cut away. A training-wall to confine the tidal currents in the proper channel should also be built from the lower end of Marsh Island to Kinsey's Point.

The work of widening the water-way opposite the city to 600 feet, commenced under the previous projects, has been only partially accomplished, and should now be completed by the cutting away of a strip of land on the Hutchinson's Island side. A frontage of about 2,300 feet, averaging 62½ feet in width, should be removed. All but 500 feet of the front contains wharves, the majority in a more or less dilapidated condition. The land is held by sundry parties, is occupied by improvements, such as saw-mills, log-ponds, a ship-yard and marine railway, and machine-shops.

It is understood that the city authorities agree to give, and the landholders to accept, an equal area of land directly in rear of the land to be ceded. The United States is expected to pay the expenses of moving back and putting up again on the new sites the several establishments now existing, and of replacing the wharves along the front as it may be newly established. The aggregate claims for damages on this account will probably amount to $45,000 or $50,000.

It may be proper, after the land on Hutchinson's Island shall have been cut away, to extend the line of bulkheads down to the lower end

of Fig Island. The present irregularities of the shore-line opposite the city will then disappear, the tidal currents being guided by training-walls on both sides, and the maintenance of the increased depth of the harbor rendered less expensive.

It is recommended that the training-wall at the wrecks be kept up to its present high-water level.

A channel not less than 300 feet wide and 21 deep at low water should be dredged from the upper limit of the city to deep water at Fort Oglethorpe.

From Fort Oglethorpe to the head of Elba Island no improvement of the water-way is needed.

3. BETWEEN THE HEAD OF ELBA ISLAND AND THE OYSTER-BEDS.

To increase the volume of ebb flow at the head of Elba Island, the south channel must be gradually obstructed, as proposed in the project of March 19, 1879, or probably finally closed. The exact location and character of the structure which will be required is a matter for which there is ample time for consideration. The cost of a high-water closure-dam is, however, embraced in the present estimates.

A training-wall should be constructed from Barnwell Island No. 3 to the bight of the Carolina shore, and some short spur shore protection may be needed in the vicinity.

In order to secure and maintain a channel of the desired dimensions between the head of Elba Island and the oyster-beds additional spur-dams will undoubtedly be needed at various points, their exact locations to be hereafter determined upon. The same object may perhaps be attained, and at no greater cost, by connecting the heads of the dams already constructed by training-walls which would, by equalizing the dams, cause the shoals between the sets of dams to disappear, and also form reservoirs for the deposit of material dredged in these localities, thereby reducing the cost of dredging to a minimum.

When the channel is near a bank of the river, as at the lower end of Elba Island, Venus Point, and Long Island, shore protection can be applied if necessary.

The various deep-water pools between Fort Oglethorpe and the oyster-beds will be connected by a dredged channel at least 300 feet in width and from 21 to 22 feet deep at low water.

4. FROM THE OYSTER-BEDS TO TYBEE ROADS.

For the improvement of the water-way in this section, which includes Tybee Knoll, northeast of Fort Pulaski, the construction of two training-walls extending eastward about 3 miles from the oyster-beds will be required to concentrate the flow of water at the mouth of the river. Their exact location, extent, and mode of construction being now indeterminate, the estimate for them, which is considered liberal, may vary considerably.

Dredging between these training-walls will be required.

5. TYBEE ROADS TO THE SEA.

At present two channels exist across Tybee Bar, known as the north channel and the main or south channel. It will be seen from the report of Lieutenant Carter that the north channel has been increasing in depth, having gained over 2 feet in the past thirty years.

As at all other places on the South Atlantic coast, the tendency of the main bar channel is to move southward and eventually disappear, to break out again further to the northward, and it is therefore proposed to improve the north channel by the construction of a detached breakwater on its north side, extending from a point near the lower end of Calibogue Sound in an easterly direction to the 21-foot curve on the outer slope of the bar. A south jetty, starting from the northeast point of Tybee Island and extending in a northeasterly direction, may be needed for the better concentration of the ebb currents, and the cost of this has therefore been included in the estimates.

The materials of which the works are to be constructed are logs, brush, stone, and concrete, in the most economical proportions, employing stone and concrete as sparingly as may be consistent with safety.

Dredging to a minimum high-water depth of 28 feet will be required from the city to the sea.

The approximate location of the works hereinbefore mentioned is given upon the index map transmitted herewith.

It is estimated that about 11,000 linear feet of shore protection, 64,000 linear feet of spur-jetties or training-walls, 27,500 cubic yards of brush-mattresses, 1,500,000 square yards of log and brush mattresses, 84,000 cubic yards of concrete, 540,000 cubic yards of stone, and 7,000,000 cubic yards of dredging, will be required in the execution of the proposed project.

The total aggregate cost, including 10 per cent. for engineering and contingencies, is estimated at $6,660,000.

It is to be understood that the project herein given is subject to such modification in the location and method of construction of the works of improvement as experience during the progress of construction may suggest.

Commercial statistics relating to the proposed work of improvement are included in the report of my assistant, First Lieut. O. M. Carter, Corps of Engineers.

The following papers accompany this report:

1. Report of First Lieut. O. M. Carter, Corps of Engineers, and his commercial statistics' report.
2. Index map of the Savannah River.
3. Charts of the Savannah River from survey made in 1887 (three sheets).

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers,
Bvt. Maj. Gen. U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT O. M. CARTER, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
New York, August 25, 1887.

COLONEL: I have the honor to submit the following report upon the proposed improvement of the Savannah River, Georgia. In obedience to your instructions, an examination and survey of the river were made by me, under authority of the river and harbor act of August 5, 1886, which provided for a survey of the Savannah River "from cross-tides above Savannah to the bar, with a view to obtaining 28 feet of water in the channel."

The amount allotted for this survey being less than one-half of the least amount necessary for that purpose, the data upon which the report is based are incomplete and in-

sufficient. The works of improvement recommended are therefore simply outlined and subject to such modifications as the information to be obtained hereafter may suggest.

DESCRIPTION.

The Savannah River is formed by the junction of the Tugaloo and Keowee, and flows in a southeasterly direction to the sea. Its channel length from this junction to its mouth is about 450 miles, while the distance in a direct line is only 250 miles. It drains, with its tributaries, an area of about 8,200 square miles.

The country bordering the upper part of the river is hilly and generally cultivated up to the river banks; that bordering the lower part is low and swampy, the banks on either side for miles being overflowed during every freshet season.

The current in the upper portion of the stream is very rapid, and carries a great deal of silt and sand, especially during the high-water season. In the wider portions of the river, where the current is sluggish, bars are formed by the deposition of the material which, in a more rapid current, was held in suspension or rolled along the river bottom.

Towards its mouth the Savannah River becomes a tidal stream, the flood tides ascending in ordinary stages of the river to a point about 45 miles above the sea. The tidal influences are much modified, however, by winds and freshets.

At a point about 12 miles above the city of Savannah the river divides into three channels, known as the Front, Middle, and Back rivers, separated from one another by Isla, Onslow, and Argyle islands. At the lower end of Onslow Island the Middle River unites with the Front River, this stream being connected at the lower end of Argyle Island with the Back River by the cross-tides.

Below the cross-tides the Front and Back rivers are separated by Hutchinson's and Fig islands. At the lower end of Fig Island the Front and Back rivers unite, and from this point there is but one channel until the upper end of Elba Island is reached, where the river is divided by a succession of low marsh islands into two channels, the North, or main ship-channel, and the South Channel, which unite again below Cockspur Island.

HISTORY OF IMPROVEMENT.

From 1733 to the outbreak of the Revolutionary War there was little change in the condition of the river, vessels of from 12 to 13 feet draught being able to pass from the city to the sea at ordinary high water. On the bar was found from 3 to 3½ fathoms at low water.

During the Revolutionary war two vessels were sunk on a shoal opposite the city, known as the "Garden Bank;" others were sunk further down the river, below the lower end of Fig Island, at a place since known as the "Wrecks," and others still above the city. These obstructions caused great shoaling in the river, reducing the high-water depth at the Wrecks from 18 feet to 12.

In 1787 an act was passed by the State of Georgia levying a tax upon shipping entering the port of Savannah, the object being to create a fund to be used in clearing the river of wrecks. The amount of money received under this act can not be definitely ascertained, but was not much less than $100,000.

In 1793 it is reported as "expedient that a greater body of water should be thrown into the main channel," and accordingly an act was passed by the State empowering the Commissioners of Pilotage to "turn and alter any water course or courses, to make cut-offs from river to river and from creek to creek, so that the same be confined within the upper point of the south end of Argyle Island on the main stream of the said river and to the mouth thereof."

From 1804 to 1809, in pursuance of this authority, the Commissioners of Pilotage attempted to close the Back River, and a number of piles were driven between Hutchinson's Island and Argyle Island to impede the flow of water into the cross-tides. Subsequent futile attempts were made to close this channel, and some of the piles below low water are still standing. In 1797 two projects for the closure of the channel between Hutchinson's and Fig Islands were submitted to the Commissioners of Pilotage, but no action was taken thereon.

In 1816 the Commissioners recommended the closing of the Fig Island channel, and various efforts were made to accomplish this end by driving piles, sinking wrecks, etc., but none of these efforts were successful. In 1820 the Commissioners report upon the continued failure to close the cross-tides, and state that the flow of water in the Back River is increasing so much that "Augusta boats can not float at half tide at many points in front of town."

In 1823 a dredge was put to work at the Wrecks and the depth of water on that shoal was increased nearly 1 foot.

From the close of the Revolutionary war up to 1822 pilots would not attempt to take out vessels drawing more than 11½ to 12 feet. The dredging executed at the Wrecks in

1823, however, so improved the channel that in 1825 vessels drawing about 13 feet could be taken out in good weather with favorable tides. In 1826 the first appropriation for the improvement of the river was made by the General Government. The project under which work was done contemplated dredging at the Wrecks and the building of closure-dams at cross-tides and between Fig and Hutchinson's islands. The closure-dams were to be built of timber cribs, filled with clay or other heavy material, and were to rise to 2 feet above mean low water.

Work was begun at the Fig Island dam upon these plans, but the cribs were undermined and carried away by the current. The method of construction was then changed, the dam being built of oyster shells and ballast stone, and faced with clay. This, however, was not successful, and operations were at last suspended.

In the mean time a dredge was put to work at the Wrecks, where the channel was deepened about a foot, vessels of from 13 feet to 14 feet draught being able in 1830 to go from the city to the sea with favorable winds and tides.

The Wrecks Channel was deepened in 1835, 1836, and 1837, under the direction of Lieutenant Mansfield, of the Corps of Engineers. He also advocated the construction of a dam between Hutchinson's and Argyle islands at the Cross-Tides, but this was opposed by the State of South Carolina, and therefore abandoned.

In 1839 Captain Mackey, of the Corps of Topographical Engineers, reported that "the visible diminution of the river on the south side of Hutchinson's Island slowly and surely continues, and the constant increase in the quantity of water in the Back River goes on in the same proportion." * * * "It is evident, if some measures are not taken to prevent the increase of water passing by the Back River, the process now going on will finally prevent vessels of anything like a deep draught from coming to Savannah at all." He recommended "a system of piers to be placed so as to diminish the breadth of the inlet and outlet of the Back River, thereby causing the water to be slightly checked in its course, both in flood and ebb tide, and at once turn it in the desired direction."

His scheme of improvement, however, was not adopted.

In 1849 Lieutenant Smith, of the Corps of Topographical Engineers, recommended the closing of the Fig Island Channel and the construction of two jetties, one extending down stream from the lower end of Fig Island and the other up stream from the upper end of Hutchinson's Island, the former to direct the flood and the latter the ebb current into Front River. This project was never carried into effect. The first comprehensive study of the river was made in 1853 by a commission organized under the War Department to devise a project "for the removal of obstructions in the Savannah River at a place called 'The Wrecks,' and the improvement of the navigation of said river." This project, which was approved by the Chief of Engineers and the Secretary of War, aimed at securing "a channel of at least 10 feet in depth at ordinary low water from the entrance of the river up to the city wharves, and a depth of 12 feet as high up as the anchorage at Venus Point."

The recommendations contained in the project were:

1. "To widen and deepen the channel at the Wrecks and over Garden Bank by dredging, straightening it at the same time, so as to give uniformity of curvature.
2. "To close the upper end of Fig Island, turning the water south of the island.
3. "To construct a jetty starting from the foot of Fig Island, and extending far enough in a northeasterly direction to deflect a considerable portion of the flood from the Back to the Front River.
4. "To build a deflecting work just above King's Island, with a view to throw an increased volume of water into Front River.
5. "To dredge the channel over the knoll off Cockspur Island, and, if found necessary, to deepen the channel north of King's Island and at the foot of Marsh Island, and to make a cut across the lower point of Isla Island, and enlarge the existing cut across Drakie's Point, or to make a cut across Hutchinson's Island from the Back to the Front River, entering the latter just above Marsh Island."

The estimated cost of the project was $201,427.

The sum asked for by the Commission was appropriated, and in 1853–'54 the Fig Island Channel was closed.

In 1855–'56 a number of obstructions (sunk during the Revolutionary war) were removed from the Wrecks, and a channel 11 feet deep at mean low water was dredged through that shoal.

In 1857 the King's Island jetty was built, and in 1859–'60 a considerable amount of dredging was done, especially on the knoll.

Nothing more was done towards carrying out the project of the Commission.

When work was suspended at the outbreak of the civil war, vessels of 17½ feet draught were able to come up to the city wharves, when aided by favorable winds and tides.

During the civil war a number of vessels, piles, iron-shod snags, torpedoes, logs, and timber cribs, loaded with brick and stone, were sunk at various points along the river.

In 1861 two large ships and one smaller vessel were sunk near Fort Pulaski. Later on, cribs built of yellow pine and loaded with paving stone, brick, and live-oak were sunk at the head of Elba Island. Contiguous to and just below these cribs sixteen vessels were sunk in the channel. This point has since been known as the "Obstructions."

The South Channel was closed at its upper end in the same manner, and nine cribs were sunk in an irregular line between Fort Lee and Battery Tatnall. Two other cribs were sunk a short distance above and used as a mooring for the ram *Georgia*, which vessel, armored with 500 tons of railroad iron, was scuttled and sunk on the night of the evacuation of Savannah. Wrecks were sunk near Fig Island. The ram *Ogeechee* was sunk opposite the city exchange, and another vessel was sunk a short distance above that point.

The obstructions thus placed in the river caused great shoaling, reducing the high-water depth from 17½ feet to 13½ feet. In 1866 the work of removing the wrecks, cribs, and other obstructions in the river was begun by Mr. Henry S. Welles, under contracts with the United States Treasury Department of the dates of May 1 and July 5, 1866. Under these contracts, which were annulled on January 18, 1870, there were removed 20 vessels, 40 cribs, 150 piles, and a number of iron-shod snags and torpedoes. By an act of Congress approved February 27, 1874, Mr. Welles was paid the sum of $193,132.96 for the work executed.

In 1867, the navigation of the river being seriously obstructed by the shoals, the city of Savannah assumed charge of its improvement. The total number of cubic yards dredged by the city from March, 1867, up to May, 1871, was 280,000, and the amount expended for dredge-boats, scows, steam-tugs, labor and superintendence from the close of the war up to 1872, when the United States Engineer Department resumed charge of the improvement, was about $157,000, not including interest on the original outlay.

From 1865 to 1875 there were removed from the river (mostly by Welles) 60 timber cribs, 26 wrecks of vessels, 200 piles, and a number of logs, torpedoes, etc. One torpedo in good condition was removed from the channel as late as the present year.

In 1873 a project for the establishment of a channel from Tybee Roads to the city of Savannah, practicable at high tide for vessels drawing 22 feet of water, was submitted by General Gillmore, of the Corps of Engineers. The essential features of this project, which was approved by the Department, were as follows:

1. "To construct a dam, or a deflecting jetty, preferably the former, at the Cross Tides.
2. To widen the water-way opposite the city front to 575 feet.
3. To deepen the channel by dredging at various points between the city and Tybee Roads."

The cost of this improvement was estimated at $481,320, not including the cost of jetties and bulkheads which might be found necessary at Fig Island and other points along the river. It was believed by the author of the project that "if the construction of jetties should precede dredging a large portion of the material would doubtless be removed by the increasing scouring effect of the ebb current, probably enough to cover the cost of the jetties."

A Board of Engineers, to whom this project was referred, recommended its adoption and advised the removal of the old King's Island jetty, and suggested that it might be found necessary to construct a jetty extending eastward from the lower end of Fig Island.

In 1879 an enlarged project of improvement was submitted by General Gillmore, retaining the features of the project of 1873, but recommending the definite adoption of the North instead of the South Channel, which involved the construction of a submerged dam across the South Channel, and the closing of all lateral channels from the head of Elba Island to Fort Pulaski. It also provided for shore protection at various points along the river where needed, as well as for dredging, a feature which was essentially embraced in the previous project. The eventual necessity of a jetty extending downstream from Fig Island and the contraction of the channel from Elba to Cockspur islands was recognized, but no estimates were given for this work.

In 1882 another modification of the original project of improvement was submitted. It retained all of the principal features of the two preceding projects, but provided in addition for a number of works designed to render the further improvement of the channel permanent.

The details of this project were:

1. "To raise the Cross Tides dam to mean high water.
2. To regulate the width of the river along the city front by enlarging the waterway at certain points, and by contracting it by wing-dams at Garden Bank, where the widths are excessive.
3. To construct a training-wall extending from the lower end of Fig Island eastward about 1 mile, its crest to be about 3 feet above mean low water.

4. To close the channels between Barnwell Island, to raise the South Channel dam, and to contract the river by wing-dams at various points between the head of Elba Island and Fort Pulaski."

Shore protection was also provided for at various points along the river, as well as dredging upon all the shoals between the city and the sea.

The cost of this project was estimated at $730,000, making the total cost of improvement $1,212,000.

Operations under these projects have been carried on since 1875 and the scheme of improvement nearly completed.

At present, with favorable weather, vessels drawing from 20 to 21 feet are able to go from the city to the sea on a single tide.

RELATIVE VOIDING CAPACITIES OF DIFFERENT CHANNELS.

The earlier hydrographic records of the Savannah River are very meager, but as far back as they extend the water-way of the North Channel has always exceeded that of the South Channel, and the water-way of the Back River that of the Front River.

In 1839 Captain Mackay called attention to the continually increasing volume of water voided by the Back River.

In 1873 General Gilmore stated that "the Cross Tides water-way is larger by one-third and the ebb current more rapid by one-half than in Front River below the Cross Tides, and nearly two-thirds of the water coming down the Savannah River flows through the Cross Tides into Back River, while only one-third of it passes down Front River past the city wharves."

From the gauging of the river in 1879 we find that the volume of water passing through the Cross Tides on the flood tide was 42 per cent, greater than that passing through Front River, while during the ebb tide it was only 30 per cent. greater.

The volume passing through Back River on the flood tide was 80 per cent. greater than that passing through Front River; during the ebb tide it was only 67 per cent. greater.

Since the building of the Cross Tides dam the volume of water passing through the Front River compared with that passing through the Cross Tides has been greatly increased. The effect of building this dam before the water-way of the Front River was sufficiently enlarged, however, has been to diminish the tidal range at the Cross Tides, and by increasing the slope between that point and the city to scour out large volumes of sand to be deposited in the river channel below.

Opposite the upper part of Elba Island the volume of water passing through the North Channel during the flood tide was in 1879 greater by 103 per cent. than that passing through the South Channel, while during the ebb tide it was only 90 per cent. greater.

At Long Island the volume passing through the North Channel during the flood tide was 364 per cent. greater than that passing through the South Channel; during the ebb tide it was 502 per cent. greater.

Saint Augustine Creek, which enters the South Channel between these two points, brings in about 47 per cent. of the volume which passes the first South Channel section during the flood tide and discharges about 41 per cent. of the volume which passes that section during the ebb tide.

TIDES.

The mean rise and fall of tide at Fort Pulaski is 7 feet; at Savannah it is 6 feet; and at Cross Tides 4.5 feet.

The height and duration of the tides in the Savannah River are very much influenced by winds and freshets, and instances are on record where during storms the high and low waters at Fort Pulaski have been reversed.

From observations made in April and May, 1887, when the river was at its normal stage, the following is derived:

	h.	m.
Duration of flood tide at Fort Pulaski	5	48
Duration of ebb tide at Fort Pulaski	6	37
Duration of flood tide at Savannah	5	11
Duration of ebb tide at Savannah	7	18
Duration of flood tide at Cross-Tides	4	37
Duration of ebb tide at Cross-Tides	7	49

The measured velocities of the ebb currents in the Savannah River are greater than those of the flood, and the longer duration of the ebb tide is due to the fact that the volume voided then exceeds that voided during the flood by the amount of drainage water.

The river was gauged when at its normal stage in 1879, and gave at Long Island a *mean flow* during the flood tide of 108,867 cubic feet per second, and during the ebb tide

125,583 cubic feet per second. The difference between these two volumes should be approximately equal to the fresh-water discharge of the river.

The mean annual rainfall in the basin of the Savannah River is 51.12 inches. The evaporation and absorption is very great, especially in the swamp districts, and the usual formulæ will give too great a discharge.

I assume that not more than 30 per cent. of the rainfall reaches the sea, or that the mean available rainfall in the Savannah basin is 0.0035 foot per day. During an ebb tide the water collected in about twelve and one-half hours will flow out, giving an average discharge of 17,317 cubic feet per second, which agrees very closely with the results obtained by the gauging of the stream.

In the rainy season, when the ground is saturated with moisture, the discharge may be from eight to ten times as great as that here given.

From the Coast Survey records it is ascertained that, when not affected by storms, the flood tide produces a northern and the ebb a southern current along the coast.

WINDS AND STORMS.

The following tables, derived from the Signal Service reports, show the average frequency of winds for different months during the sixteen years ending December 31, 1886, and the monthly wind movement in miles during the same period:

Monthly average frequency of winds for sixteen years, 1871 *to* 1886.

Months.	N.	NE.	E.	SE.	S.	SW.	W.	NW.	Calms.	Prevailing direction.
January	195	154	128	101	173	183	179	284	90	NW.
February	145	152	137	91	186	158	185	224	88	NW.
March	105	93	141	113	248	242	223	240	81	S.
April	88	89	157	141	275	280	195	156	57	SW.
May	89	133	181	218	314	218	122	125	84	S.
June	66	96	153	198	304	323	146	57	94	SW.
July	82	82	118	185	308	389	171	46	107	SW.
August	126	133	173	175	268	277	100	80	146	SW.
September	194	254	237	180	134	105	60	93	176	NE.
October	242	277	215	114	105	108	89	205	130	NE.
November	247	170	122	108	101	159	160	269	104	NW.
December	196	157	128	100	122	200	211	282	92	NW.
Sixteen years	1,775	1,790	1,890	1,724	2,538	2,642	1,841	2,061	1,249	SW.
Per cent.	10.9	11.0	11.6	10.6	15.6	16.3	11.3	12.7	.....	.....

Monthly wind movement in miles for sixteen years, 1871 *to* 1886.

Months.	1871.		1872.		1873.		1874.	
	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.
January	.....	NW.	2,176	NW.	4,476	NW.	4,562	NW.
February	.....	SW.	2,989	NW.	5,252	W.	4,429	N,SE,NW.
March	.....	S.	4,489	NW.	5,485	NW.	4,683	S, W.
April	.....	SW.	4,860	E.	4,871	S.	6,800	S.
May	11,016	SW.	4,230	SW.	4,344	S.	5,324	SW.
June	2,740	SW.	4,179	SW.	4,454	SW.	5,051	SE, SW.
July	2,320	S.	4,025	SW.	3,539	SW.	3,918	SE, S.
August	5,230	E.	3,564	S.	3,420	SW.	4,172	SW.
September	3,640	NE.	2,733	SE.	4,456	NE.	4,540	E.
October	1,880	NE.	4,034	NW,NE.	4,492	NW.	3,403	NW.
November	2,790	SW.	3,704	NW.	4,886	NW.	5,142	NE.
December	2,270	SW.	3,835	NW.	4,919	NW.	4,843	SW, NW.
Total	31,886		44,818		54,594		56,867	
Average	3,984	SW.	3,735	NW.	4,550	SW.	4,739	SW.
Maximum velocity	72		60		48		40	
Direction	NE.		NE.		SE.		NE.	
Date	August 18.		March 1.		September 19.		August 13.	

Monthly wind movement for sixteen years, 1871 *to* 1886—Continued.

Months.	1875.		1876.		1877.		1878.	
	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.
January	4,956	NW.	4,337	S.	4,787	SW.	5,893	W.
February	5,128	W, NW.	3,520	NE.	4,826	NE.	4,928	N.
March	6,229	E, S, NW.	5,296	NW.	6,298	NW.	5,518	S.
April	6,139	S, W.	4,751	SW.	5,825	SW.	5,575	S.
May	5,340	S.	3,842	SE.	5,721	E.	5,528	S.
June	4,173	S.	3,974	SW.	4,932	SW.	4,660	S.
July	5,082	S.	2,997	SW.	4,537	SW.	5,332	E.
August	4,160	S.	1,963	SW.	3,853	SW.	4,332	SW.
September	4,242	NE.	2,184	SW.	5,008	NE.	5,206	NE.
October	4,306	SW, NW.	4,421	NE.	4,644	E.	4,329	NW.
November	4,590	NE.	.....	W.	5,641	N.	4,477	NW.
December	4,935	SW.	5,498	N, NW.	5,335	E.	4,634	NW.
Total	59,300		42,783		61,407		60,412	
Average	4,942	W.	3,889	SW.	5,117	SW.	5,034	S.
Maximum velocity	48		40		36		42	
Direction	SW.				NW.		E.	
Date	March 7.		August 12.		March 17.		September 11.	

Months.	1879.		1880.		1881.		1882.	
	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.
January	4,648	NW.	4,267	N.	5,067	N.	5,372	S.
February	4,632	N.	5,003	S.	6,470	NE, W.	5,422	S.
March	5,851	SW.	5,793	SW.	7,743	W.	6,366	S.
April	5,905	S, W.	5,706	S.	6,395	SW.	4,947	S.
May	5,578	S.	4,714	S.	5,383	E.	5,385	S.
June	4,161	S.	4,928	SW.	5,243	SW.	5,147	S.
July	4,437	SW.	4,130	SW.	5,513	SW.	4,873	SW.
August	4,319	NE.	3,895	S.	5,471	E.	4,481	S.
September	4,690	NE.	3,093	N.	4,010	E.	4,184	S.
October	5,525	NE.	4,423	N.	5,763	NE.	5,579	NE.
November	4,373	N.	3,956	NE.	4,937	N.	5,326	N.
December	3,500	S.	5,045	SW.	5,860	N.	5,369	NW.
Total	57,619		55,002		67,855		62,151	
Average	4,802	S.	4,583	SW.	5,655	E.	5,179	S.
Maximum velocity	36		52		80		38	
Direction	NW.		NE.		NE.		NE.	
Date	March 30.		October 8.		August 27.		October 11.	

Months.	1883.		1884.		1885.		1886.	
	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.	Total movement.	Prevailing direction.
January	4,756	NW.	5,589	NW.	6,603	N.	6,660	W.
February	4,703	E.	5,285	S.	5,385	NW.	5,479	NW.
March	6,130	NW.	6,349	S.	5,472	NW.	6,370	NW.
April	6,306	S.	5,554	W.	5,899	S.	6,968	E.
May	5,563	S.	5,436	S.	5,395	S.	5,926	S.
June	4,967	S.	5,012	S.	4,387	S.	5,071	S.
July	4,916	S.	4,791	S, W.	4,450	SW.	4,462	SW.
August	4,180	S.	3,325	SE.	4,660	SE.	4,637	SW.
September	4,634	N.	4,832	E.	5,501	E.	4,592	E.
October	5,411	N.	4,978	NE.	5,699	N.	4,743	E.
November	4,723	N.	4,326	N.	4,649	NW.	4,365	SW.
December	4,316	N.	4,321	N.	5,905	W.	4,741	NW.
Total	60,625		59,898		63,905		64,014	
Average	5,050	S.	4,992	S.	5,325	S.	5,334	S.
Maximum velocity	38		38		56		37.	
Direction	NW.		W.		NW.		NE.	
Date	April 17.		April 2.		August 25.		April 18.	

From these tables it will be seen that during the past sixteen years 33½ per cent. of the winds observed have been from the N. NE. and E. The waves resulting from these should produce a southerly movement of sand along the coast. Thirty-one and nine-tenths per cent. have been from the S. and SW. These should move the sand in a northerly direction. Twenty-four per cent. have been from the NW. and W. and $10\frac{6}{10}$ per cent. from the SE.

The former being offshore and the latter onshore, winds should have no appreciable effect in the transportation of sand along the shore.

Although the prevailing winds are from the SW., during the great storms which have taken place their direction has been from the NE., and as the movement of sand takes place in the direction of the wind which produces the greatest agitation for the greatest time, an examination of the charts shows, as might have been expected, a prevailing sand movement toward the SW., due to the preponderating influence of the NE. storms.

PLAN OF IMPROVEMENT.

I assume that "28 feet of water in the channel" means a central depth of 28 feet at mean high water, or a navigable high-water depth of from 25 to 28 feet, depending upon winds and tides.

There is no commerce above the city limits requiring the improvement of the river in that direction for purposes of deep-water navigation, and the only work to be executed there will simply be that necessary to facilitate and render permanent the improvements to be executed lower down.

From the Cross Tides to the city of Savannah the right bank of the river is a bluff composed of fine sand, which washes badly when exposed to the current. The left bank is low and marshy, and is protected from overflow at high tide by rice-dikes built close to the river. Below the city both banks of the river are low and marshy, and with the exception of that portion of the right bank between the city and Mackay Point are overflowed at extreme high water. These marsh banks are composed of soft, sticky sand mixed with a small proportion of gray sand and fine shells. Near the high-water mark the banks are tough and resist the eroding action of the current, but underneath this tough covering there is a layer of soft mud and fine shells which are easily set in motion. The current impinging against the bank cuts out the soft substratum, and the tougher crust then falls in of its own weight.

The bottom of the river is composed of coarse silicious sand resting on marsh mud.

On Tybee Knoll there are beds of oyster shells, underlaid by fine sand and shells.

The bar is composed of a mixture of fine silicious sand and broken shells, which are kept in suspension by a moderate current. The principal agent upon which reliance must be had to maintain a stable, deep-water channel is the ebb tide.

The further up-stream the flood title ascends, the more powerful will be the ebb, the water which produces the greatest effect in the improvement of the river being that which, backed up by the flood tide, is confined during the ebb in the channel which it is desired to improve. The magnitude of this effect depends upon the "velocity and volume of the tidal flow through the channel section," both of which are functions of the tidal range. In any scheme of improvement, therefore, provision must be made for the free ascent of the flood tide. Any contraction of the channel, unduly restricting the tidal capacity of the stream, will inevitably cause a reduction in the tidal range and lead to shoaling in the river. The cross-sectional area of the river channel should also be such as to utilize throughout its entire length the scouring power of the current at all stages of the tide. The channel should then be funnel-shaped, diminishing in area with the distance from the sea. Theoretically, the best form for the self-conservation of a tidal channel is given as that in which "the cross-sectional area uniformly decreases in the inverse ratio of the square of the distance from the tidal mouth, or entrance."

In the Maas the increase in the width of the river in proportion to its length is about 20 in 1,000 from Vlardingen to the sea, while in the case of the Seine training-walls this ratio is only about 5 in 1,000. The dimensions to be given to the channel must be determined, however, in each case, according to the regimen of the river which it is desired to improve.

In order to preserve, as nearly as possible, the present regimen of the Savannah River, I have assumed a widening of 20 in 1,000 for the lower reaches of the river, and of from 10 to 15 in 1,000 for the upper reaches, the width of the channel increasing from 600 feet opposite the city to 2,000 feet at Tybee Knoll.

To regulate the width of the river and to direct the tidal flow between the city and Tybee Roads, I would recommend the construction of training-walls rising to midtide. Training-walls rising to high water, while they would prolong the tidal flow into the upper reaches of the river, would, it is to be feared, unduly restrict its tidal capacity, and it is thought more prudent to adopt provisionally those rising to midtide only.

Hitherto, on account of their greater cheapness, spur-jetties have been used instead of training-walls, but the same difficulties have attended their use as have been observed upon the Clyde and elsewhere. The currents impinging against the ends of the dam scour out pockets of excessive depths there, while between the sets of dams are found shoals of greater or less extent, the river-bed being thus very irregular and ill adapted to the rapid transmission of the tidal wave. Moreover, the spaces between the dams, acting as tidal reservoirs, prevent the free flow of the tide into the upper reaches of the river.

Training-walls also provide a place for the deposition of the immense volume of dredged material, which otherwise would have to be towed to sea at great expense. Deposited between spur-dams, it would find its way back into the channel unless restrained by training-walls. Openings should be left at intervals in the training-walls to receive the dredgings.

Above Venus Point the training-walls may be built of log and brush mattresses loaded with rubble-stone, or of piles and brush. These piles may be driven in two parallel rows, from 8 to 12 feet apart, depending upon the depth of water, the piles in each row being placed at intervals of 6 feet. The space between these rows should then be filled with brush fascines placed with their axes parellel to the axis of the work, brought up to the desired height, and loaded with from 100 to 500 pounds of stone per running foot of wall. The piles should then be cut off at midtide and connected together both longitudinally and transversely. Below low water, work of this character will be permanent. That portion above low water may need occasional renewal, but it will be cheaper to rebuild the superstructure when necessary than to attempt to construct the walls of stone or concrete.

Below Venus Point the exposure of the work to heavy seas renders the above method of construction unsuitable. From Venus Point to Tybee Roads the training-walls should be built up to mean low water, of ordinary log and brush mattresses loaded with rubble-stone. Above low water stone alone or concrete should be used.

Above the Cross Tides no work will be needed except at the cut across Drakie's Point, which it would be well to enlarge to a width of 200 feet.

The Cross Tides Dam, built before the water-way of the Front River was large enough to discharge the volume of water thrown into it, has had the effect of diminishing the tidal range there about 1 foot.

A portion of King's Island should be cut away, leaving a channel between it and the Georgia shore 400 feet wide and about 10 feet deep at mean low water. A dam should be thrown from the lower end of this island across to Hutchinson's Island and the Cross Tides dam raised to high water, or the old King's Island jetty extended to Argyle Island.

A training-wall should be built from the lower end of Marsh Island to Kinsey's Point, and a dam thrown from its lower end across to Hutchinson's Island.

For a distance of 2,500 feet below Kinsey's Point the river is unduly contracted.

The tidal flow is greatly obstructed, the rate of propagation of the tidal wave being reduced from 19 miles per hour at the head of Elba Island to only 6 miles per hour at the city. A strip of land should be cut away from the Hutchinson's Island side and the river widened to 600 feet. The damages to private property ought not to exceed $45,000.

A training-wall should be built from the old dry-dock opposite the city to a point about 1,000 feet above the Fig Island light. The Savannah, Florida and Western Railway wharves at the lower end of the city extend out too far into the stream. If allowed to remain slips should be built to receive the vessels instead of mooring them at the extremity of the wharves, as at present.

Some settlement may take place at points along the Fig Island jetty. The crest of this work should be kept at mean high water. It may in time be found necessary to extend it farther down stream.

Some shore protection may be needed on the south side of the Wrecks Channel. The cheapest method of protection would be to construct short spurs of piles and brush similar in design to the training-walls at intervals along the bank which is being eroded.

From Fort Oglethorpe to Mackay Point the river has ample widths and depths.

The South Channel must be closed as soon as the water-way of the North Channel is sufficiently enlarged to allow of its being done without obstructing the flow of the flood tide.

Considered with a view to the improvement of the river alone, the best place to build the closing dam would be at the channel's mouth. This, however, would cut off the "inside route" to Florida.

The dam may be built below the mouth of Saint Augustine Creek, at the same time throwing a low dam across that stream to prevent an increased flow of water through that channel; or the entrance to the channel may be obstructed by building spur-dams from Mackey Point and Elba Island, leaving an opening between their ends of 100 feet, a wide apron composed of brush mattresses loaded with rubble-stone being laid across

his opening to prevent dangerous scour. A short spur-dam should be built at the head f Elba Island to stop the cutting which is taking place at that point.

The channel at the head of Elba Island is too crooked for easy navigation of large ships. It would be well to remove about 150 feet of the end of Dam No. 15, although his is not at present recommended. A training-wall should extend from the outer end f Dam No. 15, or from the lower end of Barnwell Island No. 3 to the concave bend pposite Spirit Island. Some shore protection may be needed in the bight there.

Training-walls and shore protection should extend from the upper flats to the Oyster Beds, and a portion of Dams No. 13 and 25 should be removed, as shown on the chart herewith.

Training-walls should also be built for the improvement of the channel across Tybee Knoll. Their position is only approximately indicated on the chart, as it is deemed best to leave the question of the exact location of the works open until the time of their construction. Any changes which may be made, however, will not materially affect their cost.

In 1773 there was a single channel across the bar with a least mean low-water depth of from 3 to 3½ fathoms.

In 1855 this channel, while maintaining its depth, had, under the influence of the northeast storms, shifted to the southward a little more than 1¼ miles, and a new channel had formed to the northward, having a least mean low-water depth of 14 feet. At present the Main Channel is about one-fourth of a mile further south than in 1855, while the North Channel has practically the same position as at that time.

The depth in the Main Channel has not sensibly changed in a century. The North Channel has deepened over 2 feet within the last thirty years, the inner 3-fathom curve having in that time pushed seaward 4,500 feet and the outer curve landward 3,000 feet. The distance across the bar between the inner and outer 3-fathom curves is at present 4,500 feet.

Between the 3½-fathom curves it is 11,750 feet.

In the Main Channel the distance between the inner and outer 3½-fathom curves is only 4,320 feet. The travel of sand being from the northeast, the bar channels at the mouth of the Savannah River, both of which are ebb-tide channels, are gradually working to the southward, and in course of time the Main Channel will have moved so far to the south that the outflow through it will be greatly impeded. The South Channel will then shoal and the North Channel continue to deepen. The South Channel, voiding a continually diminishing volume of water, will eventually fill up and there will probably be a return to a single channel.

The bar is exposed to the full force of the Atlantic Ocean, and it is thought that a dredged channel would afford only temporary relief. If the travel of sand be arrested and the tidal currents trained in the direction of the channel, it is believed that a low water depth of 21 feet can be maintained without much if any increase in the present velocity of ebb flow. For the permanent improvement of the bar, I would recommend the construction of a detached breakwater extending from near Red Buoy No. 2, at the mouth of Calibogue Sound in a southeasterly direction to the 21-foot curve on the outer slope of the bar. The breakwater will rise to 9 feet above mean low water and consist of a concrete superstructure resting upon a rubble base with mattress hearting. The rubble base will rise from the bottom with side slopes of 1 on 2 to within 5 feet of mean low water, where it will have a width of 42 feet. The concrete superstructure will vary in width at the crest from 8 to 12 feet, and may be built either of blocks or of bags, capped with concrete in mass.

If the South Channel be selected for improvement no south jetty will be needed. For the improvement of the North Channel it is possible that a south jetty reaching across the deep water at Tybee Roads may be required, and the cost of this has been included in the estimate. It may also be found necessary in either case to lay a single course of mattresses loaded with rubble-stone along the entire southern side of the improved channel to keep it from shifting to the southward, but no estimates for this have been submitted.

If the North Channel can be kept open without the construction of a south jetty it can be improved for about $1,500,000 less than the South Channel. If a south jetty has to be constructed the cost of improving the North Channel will still be more by $500,000 than that of improving the South Channel. That portion of the breakwater extending from A to B must be constructed for the improvement of either channel, and as it will be some time before the remaining portion of the breakwater will be built, I think that while the improvement of the North Channel at present appears most desirable, the exact location of the breakwater should not be decided upon until the work of construction is about to begin, in order that advantage may be taken of any changes in the bar which may occur in the mean time.

A 21-foot mean low-water channel must be dredged from Savannah to the sea. least width of the dredged channel should be 300 feet, and operations should be on, so far as possible, simultaneously throughout the whole extent of the river, conjunction with the construction of the contracting works previously recommen

ESTIMATES.

Drakies Cut:		
157,933 cubic yards dredging, at 15 cents per cubic yard		$23,
Cross Tides to Fort Oglethorpe:		
12,790 linear feet of training-wall, at $8 per foot	$102, 320. 00	
1,350 linear feet of shore protection, at $8 per foot	10, 800. 00	
14,955 cubic yards brush mattresses, at $1 per cubic yard	14, 955. 00	
6,940 cubic yards stone, at $3.50 per cubic yard	24. 290. 00	
2,497,537 cubic yards dredging, at 15 cents per cubic yard	374, 630. 55	
Possible land damages	45, 000. 00	
		571,
Fort Oglethorpe to Oyster Beds:		
South Channel—		
12,420 cubic yards brush mattresses, at $1 per cubic yard	12, 420. 00	
2,450 square yards log and brush mattresses, at 60 cents per square yard	1, 470. 00	
7,195 cubic yards stone, at $3.50 per cubic yard	25, 182. 50	
		39,
North Channel—		
51,240 linear feet training-wall, at $10 per foot	512, 400. 00	
7,150 linear feet shore protection, at $10 per foot	71. 500. 00	
2,750 linear feet shore protection, at $15 per foot	41. 250. 00	
2,447,394 cubic yards dredging, at 15 cents per cubic yard	367, 109. 10	
		992,
Oyster Beds to Tybee Roads:		
633,947 square yards log and brush mattresses, at 60 cents per square yard	380, 368. 20	
162,322 cubic yards stone, at $3.50 per cubic yard	568, 127. 00	
1,454,874 cubic yards dredging, at 15 cents per cubic yard	218, 231. 10	
		1, 166,
Tybee Roads to the sea:		
North Channel:		
919,892 square yards log and brush mattresses, at 60 cents per square yard	551, 935. 20	
362.581 cubic yards stone, at $3.50 per cubic yard	1, 269, 033. 50	
84,069 cubic yards concrete, at $15 per cubic yard	1, 261, 035. 00	
595,597 cubic yards dredging, at 30 cents per cubic yard	178, 679. 10	
		3, 260,
South Channel:		
753,411 square yards log and brush mattresses, at 60 cents per square yard	452, 046. 60	
378,047 cubic yards stone, at $3.50 per cubic yard	1, 323, 164. 50	
143,189 cubic yards concrete, at $15 per cubic yard	2, 147, 835. 00	
64,440 cubic yards dredging, at 30 cents per cubic yard	19, 332. 00	
	3, 942, 378. 10	
		6, 054,
Contingencies, 10 per cent		605,
Total		6, 659,

The above estimates are made upon the supposition that funds sufficient for advantageous prosecution of the work will be regularly supplied.

APPENDICES.

1. Chart showing location of proposed works of improvement.
2. Charts of the Savannah River from Cross Tides to the sea from surveys made in 1887 (3 sheets).
3. Report upon the commercial importance of Savannah River and Harbor.

Respectfully submitted.

O. M. CARTER,
First Lieutenant, Corps of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. A.

COMMERCIAL STATISTICS.

UNITED STATES ENGINEER OFFICE,
New York, August 25, 1887.

COLONEL: I have the honor to transmit herewith statistics relating to the commerce and navigation of the port of Savannah from 1873, the year in which the improvement of the harbor was resumed by the General Government, up to the present time.

The tables of commercial statistics appended hereto show a steady growth of both the foreign and domestic trade of Savannah. It is now the largest port of the South Atlantic coast, the second cotton port of America, and the first naval-stores port of the world. The exports of cotton have risen from less than 500,000 bales in 1872 to over 800,000 bales in 1886, and are still increasing.

The increase in value of the annual exports of naval stores is still more remarkable. Starting with a value of less than $50,000 in 1873, it reached a total of over $3,250,000 in 1886, with prospects for a still greater increase in the future. The receipts of spirits of turpentine for the year 1886–'87 were nearly 40,000 casks greater than those for the corresponding period of last year, and the rosin receipts for this period were over 131,000 barrels greater. The value of the exports of timber and lumber within the past fifteen years has risen from about $500,000 to over $1,000,000, that of fruits and vegetables from less than $500,000 to nearly $2,000,000, while that of pig-iron has risen from about $25,000 to nearly $200,000.

While the volumes of exports have thus increased and the tonnage entered at the custom-house grown from 1,074,367 tons in 1873 to 1,355,121 tons in 1886, the number of vessels entered and cleared during this period has decreased by 151, from the fact that the increased depth of water in the river allows vessels of much greater carrying capacity to visit the port than in former years. In 1873, when the works of improvement were begun, the usual high-water draught was about 14½ feet. At present vessels of from 20 to 21 feet draught are able to go from the city to the sea on a single tide and foreign and coastwise steamers of great carrying capacity have largely replaced the small sail vessels which fifteen years ago carried the great bulk of Savannah's commerce.

The increased facilities for navigation have resulted in greatly reducing rates of marine freights and insurance, and this has had a direct effect upon the reduction of freights over the competing land routes. So many causes, however, have been in operation during the last fifteen years to secure reductions in these directions that it is, perhaps, impossible to ascertain what portion is due to the improvement of the harbor. Mr. Comer, late the president of the Savannah Cotton Exchange, estimates it at 25 per cent., and this is, perhaps, below rather than above the actual decrease, inasmuch as without the improvements already near completion it would be impossible for a majority of the foreign and coastwise steamers now plying to this port to enter the harbor at all.

As to the advantages, prospective and realized, through the completion of the proposed improvements, it may be stated that those already made have justified the extension of lines of railway into the interior, opening up to those places markets for their products which before did not exist.

The Savannah, Florida and Western Railway system embracing over 750 miles of railway in Florida and Georgia, with nearly 1,000 miles of steamboat and steamship lines tributary thereto, depends largely for the shipment of its freight upon the facilities afforded by the port of Savannah. Through the Central Railroad system of Georgia, with over 2,200 miles of railway in the States of Georgia, Alabama, and South Carolina, the richest timber, coal, and iron districts of those States find an outlet at Savannah to

the sea. With the extensions now being constructed, the States of Mississippi, Tennessee, and Kentucky, as well as the great grain-producing sections of the West will be brought nearer to the Atlantic coast at Savannah than at any other point, and over railways of easy grades, free from obstruction by snow and ice. With increased shipments of heavy freight, such as grain, iron, and coal, deeper water at Savannah will be imperatively required. The improvements heretofore executed and the expectations of further improvements yet to be made have been the inducements to develop the railway system before mentioned. The sections of country made tributary to Savannah by these railways are among the richest in the United States, and to enable the port to furnish an outlet for the growing commerce brought to it from the interior, deep water is more than ever needed.

Very respectfully, your obedient servant,

O. M. CARTER,
First Lieutenant, Corps of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. A.

COMMERCIAL STATISTICS.

Arrivals and clearances of vessels and commerce at Savannah, Ga., from January 1, 1873, *to December* 31, 1886.

ARRIVED.

Years.	Coastwise.			Foreign ports.						Total.			Greatest draught.*
				American vessels.			Foreign vessels.						
	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.	Feet.
1873	463	381,595	11,934	34	16,140	383	213	119,316	2,999	710	517,051	15,316	17.50
1874	418	354,700	10,048	66	41,030	847	284	182,517	4,232	768	578,247	15,127	17.50
1875	370	310,877	10,102	67	39,298	781	222	145,748	3,290	659	495,923	14,173	17.50
1876	355	320,015	10,348	58	40,832	987	260	169,649	3,865	673	530,496	15,200	17.75
1877	333	379,826	10,867	54	40,948	951	287	168,247	3,950	674	589,021	15,768	18.25
1878	322	385,532	10,688	61	45,208	1,576	326	235,787	5,814	709	666,527	18,078	18.50
1879	319	411,794	8,235	30	21,994	439	279	198,040	3,960	628	631,828	12,634	17.75
1880	338	446,881	9,996	14	7,724	170	244	172,224	3,533	596	626,829	13,699	18.33
1881	383	508,422	11,069	21	10,729	237	254	151,463	3,474	658	670,614	14,780	19.00
1882	391	544,448	12,606	11	4,865	106	204	115,061	2,718	606	664,374	16,429	19.00
1883	389	468,226	10,659	10	4,115	90	160	87,025	1,965	550	559,366	12,714	18.25
1884	388	482,917	13,735	14	5,632	116	287	174,676	3,984	689	663,225	17,835	19.00
1885	395	493,610	14,622	12	5,058	125	251	163,321	3,416	658	661,989	18,163	20.75
1886	393	503,073	14,534	10	5,952	185	268	177,229	3,719	671	686,254	18,438	20.00

CLEARED.

1873	466	398,050	13,749	65	30,102	689	224	129,164	3,194	755	557,316	17,632	17.50
1874	480	407,295	12,748	71	40,397	822	229	145,038	3,437	780	592,730	17,007	17.50
1875	319	284,831	9,376	72	39,311	801	195	128,086	2,924	586	452,228	13,104	17.50
1876	410	361,999	11,222	80	49,483	1,163	185	119,699	2,827	675	531,181	15,212	17.75
1877	400	439,370	12,081	65	44,829	1,066	161	103,342	2,589	626	587,541	15,736	18.25
1878	378	418,958	10,475	61	40,128	1,255	269	183,757	5,375	702	642,843	17,105	18.50
1879	365	442,734	8,834	36	24,891	497	223	156,470	3,129	624	624,095	12,460	17.75
1880	310	434,861	10,108	26	12,536	271	242	168,255	3,446	578	615,655	13,825	18.33
1881	369	508,422	11,458	22	13,052	253	261	180,579	3,745	652	702,053	15,456	19.00
1882	350	506,213	11,917	23	9,155	205	209	135,375	3,023	582	650,743	15,145	19.00
1883	355	415,720	9,780	10	4,115	90	165	87,400	2,015	530	507,235	11,885	18.25
1884	360	452,802	13,363	15	5,634	131	288	194,075	4,315	663	652,511	17,809	19.00
1885	414	502,773	14,672	20	8,722	148	228	154,858	3,344	662	666,353	18,164	20.17
1886	378	473,135	13,912	3	939	24	262	194,793	3,970	643	668,867	17,906	20.00

* Compiled by the harbor-master.

Arrivals and clearances of vessels and commerce at Savannah, Ga.—Continued.

COMMERCE.

Years.	Value of exports.	Value of imports.	Duties collected.	Years.	Value of exports.	Value of imports.	Duties collected.
1873	$29,850,275.00	$890,664.60	$160,011.77	1880	$49,297,981.25	$660,974.00	$78,458.41
1874	50,500,945.94	788,220.00	110,492.74	1881	47,448,117.00	952,512.00	856,550.22
1875	46,004,295.60	511,818.00	61,625.44	1882	48,349,033.00	657,255.00	61,148.70
1876	41,286,581.00	511,528.00	58,163.36	1883	50,890,937.00	567,182.00	65,245.34
1877	33,569,981.00	564,937.00	34,959.93	1884	50,934,184.00	696,434.00	49,147.28
1878	41,793,477.71	505,596.00	23,364.35	1885	42,253,397.00	513,286.00	45,162.40
1879	44,980,070.89	378,782.00	27,778.73	1886	64,724,275.44	355,433.00	35,455.53

JOHN F. WHEATON,
Collector.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 58.

LOCALITIES UNWORTHY OF IMPROVEMENT BY THE GENERAL GOVERNMENT.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of preliminary examinations of localities found to be unworthy of improvement by the Government.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 29, 1887.

The Secretary of War has the honor to transmit to the House of Representatives, in compliance with the requirements of the river and harbor act of August 5, 1886, a report of the 24th instant from the Chief of Engineers, together with copies of reports from officers and agents in charge of river and harbor districts, giving the results of the preliminary examinations of such localities, from among all those enumerated, as have been found to be, in the opinion of the local engineer, not worthy of improvement by the General Government, with the facts and reasons upon which such opinion is based.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., December 24, 1887.

SIR: To comply with the requirements of the river and harbor act of August 5, 1886, I have the honor to submit herewith for transmission to the House of Representatives copies of reports to this office from officers and agents in charge of river and harbor districts, giving the results of the preliminary examinations of such localities from among all those enumerated, as have been found to be, in the opinion of the local engineer, not worthy of improvement by the General Government, with *the facts and reasons* upon which such opinion is based.

Concurring in the conclusions reached in these several instances, in conformity with the duty imposed upon me by the above act, I have not given instructions to make further surveys at these localities with the view to their improvement.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

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PRELIMINARY EXAMINATION OF LITTLE RIVER, ARKANSAS.

UNITED STATES ENGINEER OFFICE,
Little Rock, Ark., February 7, 1887.

GENERAL: In accordance with the requirements of letters dated Office of the Chief of Engineers, Washington, D. C., September 27 and October 28, I have the honor to submit the following report upon the re-examination of the Little River, Arkansas.

It being found impossible, consistent with the interests of the works under my charge, to make this examination in person, a competent civil engineer of experience and reliability was engaged to make the examination, and from his very full report, now lying before me, I am able to make the following statements, viz:

This river may be said to have two distinct districts, one hilly in character, the other level and alluvial in character.

From its mouth up for a distance of 55 miles, it is navigable for eight or nine months of the year, and for 35 miles of these 55 it is navigable the year round for boats drawing 3 to 4 feet of water. Beginning at its mouth, the first 55 miles require no improvement to meet the demands of navigation. At the end of the 55th mile, or at Hood's Landing, the entire character of the river changes. From this point the fall is so great that the river consists of a series of holes and rocky shoals. To render it navigable at even medium stages would require an outlay so

entirely disproportionate to the benefits to be conferred that it would be a waste of time to even consider the question.

In my judgment, the river above Hood's Landing is not worthy of improvement. Below Hood's Landing it now meets every demand of commerce. No further action is therefore required. The time may come when it may be desirable to make the river navigable the year round as high as Hood's Landing, but that time has not yet arrived.

I am, general, very respectfully, your obedient servant,

H. S. TABER,
Captain of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATIONS OF THE LAKES CONNECTING WITH RED RIVER BETWEEN SHREVEPORT, LOUISIANA, AND FULTON, ARKANSAS. ALSO, CLEAR LAKE, BLACK BAYOU, RED BAYOU, BLACK LAKE, AND KELLY BAYOU, TO REOPEN NAVIGABLE COMMUNICATION BETWEEN THOSE STREAMS AND RED RIVER, LOUISIANA.

These waters are classed together, because nearly all have a common origin. They are chiefly the remains of overflows caused by the raft, and of by-passes or canals made during the raft period for high-water navigation around the obstructions to Upper Red River.

In 1872 Congress began to appropriate funds for removing the raft, in order to make the navigation of Red River free, and on this work alone nearly $500,000 has been spent to the present time upon the line selected for Red River by the engineers in charge. This work is still going on, and will not be completed until the obstructions are removed to such a depth as to enable the river to recover its normal slope. During the progress of this work the lakes, by-passes, and canals have been filling up, or have been closed to some extent by dams to confine the water to the main line at medium or high stages. (Reports of Chief of Engineers, 1882, page 1546, and 1885, pages 1473 to 1475.) The low-water surface of the river has been lowered, how much it is impossible to determine for want of accurate levels before 1872; but it is safe to say by *many feet.* The slope will continue to diminish as the work progresses and the bottom scours, and the high-water line will naturally follow in proportion, thus reducing the danger of overflow.

To give some idea of changes that have taken place in Upper Red River since the work was undertaken systematically under Major Howell, I mention Silver Lake, on the right bank, immediately below Shreveport. Within the past few years this has drained naturally, has been cleared, and is now all under cultivation. A more striking proof of the reduction of the low-water slope is to be found in the reaches above Shreveport; for example, between Pandora and Shady Grove, about 15 miles above where the obstructions known as the Dawn Stumps exist. These, some hundreds in number, are thickly planted in and along the channel for a mile or more, projecting above low water, some as much as 6 feet. They look like large piles driven at random and cut off without regard to the water surface. Formerly boats went over them, but as the low-water surface fell the passage had to be made by dropping through by the aid of lines, and at last had to be given up except at high stages. These obstructions have been worked over for some years without much success. Last year at low water those in

mid-channel were cut off as near the water surface as possible, and sign-boards and gauges were set up to indicate the depth over them for safe passage. This year at the *same stage* the stumps that were cut off were found to project above the surface from 4 to 5 feet, and many more appeared, which before had not indicated themselves by a ripple. Work is now being done with high explosives to remove them down to the roots, and this must result in a greater scour in this reach than has yet occurred.

The survey provided for in the act of August 5, 1886, has been carried as far as Shreveport. According to instructions, accurate levels were taken, and all outlets and inlets examined, and the principal ones followed out for at least 2 miles. The profiles show that the low-water slope in the raft district is still far above the normal, and that a reduction in the elevation of low water of nearly 8 feet may be expected without materially affecting extreme low water at Shreveport. The profiles show a like reduction in the high-water slope. It must continue to diminish until the river becomes normal. When this condition is reached it is not probable that Red River will overflow its banks unless obstructed by log jams below, or by bars caused by dissipating the waters of the main river through outlets. The natural result of improving the main river has been, and will continue to be, the drainage of side channels and lakes. Every connection, especially at stages below high water, which might form an outlet from Red River should be closed. No attention need be paid to the inlets. If they happen to lie in the way of State levees they will be cut off, and the water derived from the small amount of natural drainage will be retained or find an outlet below.

Some of the high-water outlets from Red River have been closed, others are filling naturally as the river scours, and others are being used as places for depositing logs and stumps taken from the channel near by. This work will probably be completed by the State, it being the intention to restore the old line of levee on the right bank. It is probable that the gap in the levee on the left bank will be closed, also, though the necessity does not seem to be very pressing, by reason of the reduction of the flood-line to which I have referred. The State engineer and his assistant have examined the line, and are now engaged in obtaining information from the notes of the recent survey from Fulton to Shreveport with the hope of avoiding the expense of resurveys and separate lines of levels.

These levees would be worse than useless if the outlets were to remain open, but as it can hardly be doubted that the State authority is supreme in this matter, especially as many of the outlets were canals built under State law, and none are navigable now, the clearing of the outlets seems a foregone conclusion, and the lakes and bayous under consideration must find escape into the main river below, if at all.

Again, the United States has spent a large amount on the improvement of Upper Red River, and will doubtless continue to spend considerable sums upon this work for many years to come. To hold what has been gained requires that all outlets from Red River should be closed. To "re-open" the abandoned canals and bayous to improve the navigation of these "overflow" lakes, would be to fritter away the labor of years. There is but one case in which "outlets" are proper, and that is in the improvement of a tidal stream subject to destructive freshets from the non-tidal portion. The subject has been exhausted in discussing the Lake Borgne scheme, and need not receive further attention.

Now as to the streams in question. Most of those on the right bank are given on the map printed with House Ex. Doc. No. 103, Forty-eighth Congress, second session; those on the left bank were surveyed for a greater or less distance in connection with the recent survey of Red River, but the maps have not been developed for want of funds. On the left bank the last of the by-passes extends from Stanton's Slough down to the mouth of Posten Lake, at Miller's Bluff, a distance of about 12 miles due north and south. This was a steam-boat route during the raft period, and was entered at two or three places besides the ends, as at Alban's Canals, Nos. 1 and 2. This passage is entirely closed. The lake does not connect with Red River by any passage above. It is similar to Lakes Bodceau, Bistenau, and the Dorcheat, which connect with Red River below Shreveport, for which one appropriation was made in 1884, contrary to the recommendations of the engineer in charge, and which has not been recommended to be continued. I have not been able to discover the existence of any commerce on this lake, nor have I heard of any desire on the part of steam-boatmen for improving its navigation. No water can go into it except from natural drainage or from backwater from Red River when the latter is high.

There are two or three other lakes below Cauchatta and Carolina bluffs which derive their waters from overflow. There is no navigating them.

On the right bank there is a connected lot of bayous and ponds extending from the Arkansas line to Shreveport, a distance of about 36 miles north and south. The waters drain into Red River through bayous and the Soda Lakes, the latter forming part of the high-water route to Jefferson, Tex. The upper connection with Red River used to be through Half-Moon Lake, Kountz's, Sale and Murphy's, and Hervey's canals, and also through Simpson's Lake and Red Bayou, either by the foot of Cypress Brake, which is also called Black Lake, through Kelly Bayou, or by Sewall's Canal and Black Bayou into Clear Lake. There were two other connections from Red River at high water through Elmer's Bayou and the canal and Dooley's Bayou. All united at the foot of Clear Lake, whence the way led into the Soda Lakes through Stumpy Bayou. After the way was cleared there was a high-water route from the Soda Lakes to Red River by way of Twelve-Mile Bayou to Shreveport.

Red Bayou is a name given to many of the outlets or inlets to Red River. There are four of them in the small district above Shreveport. The principal one is about 6 miles above Gilmer, but as the bottom is somewhat above the river surface at ordinary low water, it does not receive any supply till Red River has risen considerably. At high water it is about 250 feet wide and 20 feet deep near the river, but its section is soon reduced by a dam of drift-wood about 300 feet long. There is another jam some 4 or 5 miles below, so that there is no flow of water until after the second jam is passed, the supply being obtained by percolation until the flood rises above the masses of drift. Below the second jam it enters Elmer's Bayou, the bottom of which is about 7 feet above low water at its junction with Red River.

Sewall's Canal joined these streams with Clear Lake by way of Black Bayou, about 5 miles, thence to Stumpy Bayou, about 5 miles more, and so, through a cut called Grand Pass, to the Soda Lakes.

Dooley's Bayou joins Red River about a mile below Elmer's, opposite Cauchatta Bluffs. The bottom of this bayou is above ordinary low water. It was formerly closed by a dam on the line of levee, but the opening was *restored* by private enterprise. The new State levees will follow

the old line generally, but will cross this bayou somewhat below the entrance. In the meantime, drift and snags are being forced in by the boats, when at work near by, to form a jam that may help protect the levees and assist in closing the bayou. This bayou also connects with the Soda Lakes through Sewall's Canal. There is a number of similar high-water outlets below, but none of them as large as Dooley's, except Cottonwood; but all will be cut off by the levee. The last named is quite large at its junction with Red River, but soon separates into a number of drains, none of which are navigable. The fall is quite rapid. The levee and dam crossing it have been destroyed twice, the last time in 1884.

Black Lake and Kelly Lake are above Upper Red Bayou, and connect with Clear Lake and the Soda Lakes through passes which take the names of Black and Kelley bayous. They are of the same character as the others, and like them will soon have no supply except from natural drainage.

Red Bayou carries no water when Red River is low. It is about 100 feet wide in high water, but is obstructed by logs and overhanging trees.

Sewall's Canal and about 4 miles of Black Bayou are fairly navigable for very small craft at high water, but the last mile of Black Bayou is closed at all stages.

Clear Lake is shallow—practically dry—at low stages and overgrown with willows. Stumpy Bayou and Grand Pass could be cleared to the Sodo Lakes without much difficulty if it were worth while, but there can be no navigation through the lakes till the way is cleared on the route from Jefferson to Shreveport, and not then unless a channel should be dredged to meet it.

The natural drainage of this collection of lakes, etc., is not great, and as the inlets above are to be closed as outlets from Red River, opening navigation through them to connect with Red River below near Shreveport, would, in my opinion, result in little more than draining them—an excellent thing for benefiting the lands near by and improving their healthfulness, but hardly to be obtained under the plea of improving navigable waters of the United States.

The water supply, then, must come from natural drainage and backwater from Red River at Shreveport. Taking low water at the latter as zero, a rise of 12 feet will just reach the head of the Sodo Lakes; 25 feet will barely reach Sewall's Canal; and maximum high water will not reach the foot of Upper Red Bayou. At least 20 feet on the Shreveport gauge will be required to give a 3-foot navigation in Clear Lake.

It is evident that no navigable route can be made for low water, and that to give navigation at high water a dam and canal would have to be built at great expense.

Major Howell submitted a project in 1874 for Cypress Bayou and the Soda Lakes, which involved such construction at an estimated cost of about $400,000. This was rejected as being too great in comparison with the possible benefits that might accrue. Since that time the main line of Red River has been considerably improved, and railroad facilities have been increased very greatly. Two railroads cross Red River above—one at Fulton and the other at Garland, some 60 miles below—both meeting at Texarkana. A line passes to the west of the lakes at Jefferson, and four lines now center in Shreveport. A fifth line is being built from the Cotton Belt route, east of Posten Lake and its tributaries, and will soon enter Shreveport by the present railroad bridge. The country would seem to be well supplied with means of transportation,

As to the amount of commerce that would be benefited by reopening the connection with Red River and the lakes, etc., I am unable to form any opinion. I can not learn that there has been any call for such route by river men, or that there has been any navigation at all in the lakes on the left bank since the raft was removed, and that on the right bank was abandoned as soon as Red River proper was made navigable. The products of the country about Clear Lake, Black Bayou, etc., were estimated last year at about 500 bales of cotton and 250 tons of seed, and it was thought that with Dooley's Bayou kept open the amount might be doubled. No reliable statistics could be obtained. On the other hand, the amount of commerce that would be injured would be the present and future trade of the improved portion of the Red River above Shreveport.

After a careful examination of the subject I am of the opinion that none of these streams are worthy of improvement, nor are the works public necessities. No further surveys or examinations are necessary.

[Transmitted by Capt. J, H. Willard, Corps of Engineers, with his annual report for the fiscal year ending June 30, 1887.]

PRELIMINARY EXAMINATION OF SALINE RIVER, ARKANSAS.

UNITED STATES ENGINEER OFFICE,
Little Rock, Ark., February 7, 1887.

GENERAL: In accordance with the requirements of letters dated Office of the Chief of Engineers, Washington, D. C., September 27 and October 28, I have the honor to submit the following report upon the preliminary examination of the Saline River, Arkansas, viz:

Having in my possession full data in regard to this river from Big Island to its mouth, it only remained to examine it from this point some 60 miles further up-stream, or to that point beyond which its navigation should be found impracticable.

It being found impossible consistent with the interests of the works under my charge to make this examination in person, a competent civil engineer of experience and reliability was engaged to make the examination, and from his very full report now lying before me I am able to make the following statements, viz:

There is only water enough in this reach for navigation from February to about June 1. It is only a question of water, as there are no obstructions except the railroad bridge,* already made the subject of special report in another communication.

A very careful examination was made, but as there could be nothing done to increase or prolong the supply of water, it does not seem desirable to enter into details. In fact, I incline to the opinion that the examination was intended more for the lower reaches. As I had the facts for these reaches fresh to hand it seemed best to complete the reconnaissance of the entire navigable reach and thus have upon record data concerning the entire river.

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* The railroad bridge is owned and used by the Saint Louis, Arkansas and Texas Railroad Company, and is an obstruction to the free and safe navigation of the river from February 1 to June 1. This bridge is near Rison, Ark., and does not seem to have been constructed in accordance with the terms contained in act approved June 27, 1882, Forty-seventh Congress, first session, chapter 240.

As to the reach from Big Island to the mouth, a distance of 260 miles, my annual report for 1885 (page 1598, Annual Report Chief of Engineers, 1885) states that work was completed upon this reach December 20, 1884, and that the river was left in good navigable condition at medium stages as high as Long View, and at high water as high as Mount Elba (a point within the reach recently, *i. e.*, above Big Island.) As to the necessity of further improvement of the reach from Big Island to the mouth, on page 1598, Annual Report Chief of Engineers, 1885, after careful consideration, I state—

> That this stream will at some time be a valuable artery of commerce there seems little room for doubt; but at present the country is not sufficiently settled. It would seem advisable, now that it is pretty well cleaned out, to watch the result in the way of developing the country before another appropriation is made. For a year or two the river will remain in its present condition, and this will give time to see whether it will be improved by the boats; and then from $5,000 to $6,000 a year could be profitably expended in securing an open river as far up as Driftwood.
>
> While, therefore, no appropriation is recommended for the year ending June 30, 1887, the question of further improvement is left contingent upon the results of the work done so far.

Again, on page 1388, Annual Report Chief of Engineers, 1886, I state—

> That there was expended upon this river up to June 30, 1885, $20,951.70. This has given much relief to navigation, and has practically cleared the river so far as present navigation demands.
>
> Until the requirements of commerce are greater than they are now, it is not recommended that any further appropriation be made.

From all that precedes, the situation of the river as a whole for the 320 miles that it is navigable is such that I do not feel warranted in making any recommendations for further survey, nor for the expenditure of any further money for improvement.

The records of this office are so kept that the engineer in charge will be able to see that it was expected that the reach below Big Island would require attention in the future. This will enable the Congress of the United States to afford aid to this section at once when required by the future development of the section, a matter to be determined from commercial statistics and boats using the river. At present only one boat uses the river, and it makes but one trip a year.

I am, general, very respectfully, your obedient servant,

H. S. TABER,
Captain of Engineers.

Brig. Gen. JAS. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF MOUTH OF SMITH'S RIVER, CALIFORNIA.

UNITED STATES ENGINEER OFFICE,
San Francisco, Cal., January 7, 1887.

GENERAL: In compliance with the instructions in Department's letter of September 27, 1886, I have the honor to report as follows concerning the improvement of Smith's River entrance, California.

Smith's River is a small stream which rises in the Coast Range, and after a course of some 25 miles in length empties into the ocean about 4 miles south of the boundary line between Oregon and California.

The tidal influence is felt about 4 miles above the mouth, and the tidal area of the estuary, including some connecting sloughs, is about 2.5 square miles.

In summer the fresh-water discharge is insignificant, and the depths across the bar are not more than from 3 feet to 4 feet, in a shifting channel. During the heavy winter rains the stream becomes a torrent, and the depths across the bar occasionally are increased to perhaps 15 feet at low water.

As is common with these entrances, the river spreads out into a lagoon behind the beach from which the exit to the sea is at the northern end, and close against a rocky headland. Of late years the bluff inside this headland at the north end of the lagoon has been encroached upon, and the southern sand point has advanced until now the channel inside passes among rocks and bowlders which formerly underlaid the bluff, making the passage by vessels almost impossible.

An abortive attempt has been made by the persons interested to restore the original condition of affairs by a jetty of wooden caissons filled with gravel; and to do this in an effective way, by a training-wall 1,000 feet long, of riprap, raised to half-tide along the outer margin of the channel, now encumbered with rocks, would cost about $100,000.

The effect of this improvement inside on the bar channel outside, would probably not be appreciable, and we could expect to see it afterward as now, offering, according to the season, depths of from 3 feet to 15 feet, in a constantly shifting channel. To effect a radical change for the better it would be necessary, in addition to the training-wall, as above described, to confine and direct the ebb across the bar by jetties projected into the open sea and exposed to its full violence in this stormy latitude.

It is believed that the cost of such works would not now be justified by the interests to be served. There is a saw-mill and salmon cannery near the mouth of the river, of which the former has a capacity of 35,000 feet, board measure, a day, and the latter packs some 6,000 cases and 500 barrels per year.

There is a large tract of timber and some good farming and grazing country tributary to Smith's River, but as navigation is only possible for a short distance above the mouth, the transport of the products of the upper valley there would not be much less costly than to the roadstead of Crescent City, where most of them now find an outlet.

In this connection is to be noted that a broad-gauge railroad now extends for some distance from the Crescent City Wharf towards Smith's River Valley, and is used in bringing out logs by the Crescent City Mill Company. The distance from the principal settlement of Smith's River to the Crescent City Wharf is only about 8 miles, over country offering no special difficulties, and it is lately proposed to extend this road to the valley, thus giving it an easy outlet to the sea.

I transmit herewith a tracing from the Coast Survey Chart, showing the mouth of Smith's River and the location of the desired inside training-wall; also a copy of a report by Mr. A. Boschke, assistant engineer, who lately made an examination of the place.

Very respectfully, your obedient servant,

A. H. PAYSON,
Captain of Engineers.

CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. A. BOSCHKE, ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
San Francisco, December 1, 1886.

SIR: I have the honor to report that I have made, in obedience to your instructions, an examination of Smith's River Harbor.

Smith's River is in Del Norte County. It discharges into the Pacific Ocean about 4 miles south of the State line that divides Oregon from California.

The river rises in the Coast Range; its main branches are the North, Middle, and South forks. The river proper has a length of 24 miles. The tides ascend the river to about 4 miles from its mouth.

Within this distance from the ocean the river proper and a number of sloughs form a tidal estuary of about 2.5 square miles. This estuary is separated from the ocean by a sandy peninsula of about a width of 500 feet, which terminates at a varying distance opposite a rocky headland, thus forming the entrance to a land-locked harbor. During the rainy season the freshets in the river scour a channel of ample width and an average depth of 15 feet at low water through the entrance between the rocky headland and the northern extremity of the peninsula. These freshets' discharges have caused to wear away a bluff within the rocky headland named Pyramid Point, exposing its rocky bottom, over which now the river and tidal water discharges, and has caused the end of the peninsula to encroach upon the ground where formerly an unobstructed channel was maintained by the combined action of the river discharge and tidal flow.

The present channel winds through the rocks and large bowlders of the rocky shelf, formerly covered by the abraded bluff, and is very dangerous to pass.

A jetty constructed of caissons filled with gravel has been placed at the upper end of the present channel by the owners of the saw-mill, who have about 2,500,000 feet of manufactured lumber at their wharf, which can not be shipped at present on account of the dangerous obstructions in the channel.

The attempted improvement not having given the hoped-for results, to direct the current to open the former channel now covered by the end of the peninsula, if a stone training-wall of riprap was placed on the outer line of the rocky shelf connecting with the bluff its inner end, and about 1,200 feet long, raised to half tide, it would restore the former condition, enabling the river and tidal currents deflected and concentrated by it to maintain a permanent, unobstructed channel of from 12 to 15 feet at low water, between the training-wall and the northern extremity of the peninsula.

The outer bar is very narrow and lies close inshore. The concentrated current directed by the training-wall and the steep bluff of Pyramid Point would exert a scouring power as far out as the bar, and maintain a depth upon it of probably not less than 6 to 8 feet at low water.

Prince and King's islands are situated to the north of the entrance and adjacent to it, offering shelter from the northwest swells.

The estuary or harbor has a sufficient depth to float in safety the coasting vessels which can enter this port.

The following steamers and schooners have run for this port in the past, drawing respectively—

	Feet.
Steamers:	
Mary D. Hume	10
San Vincente	9½
Continental	8
George Hawley	8
Alex. Duncan	9½
Tug Pelican	7
Schooners:	
Sophia Bee	7
Auterlin	9
Chalenger	7½
Sophia Wenger	9
Jos. Wooley	12
N. Van Bergen	8
Stranger	8½
Trucke	8
Sea Foam	10
Coquille	8½
Free Trade	8
S. Danielson	8½
Ester Cobos	7½
Helen Morriam	8
Anni Hermine	7½

The resources of the country for which this port is the natural outlet are—

	Acres.
Redwood timber land from Chetco to north bank of Smith's River	58,000
Belt lying contiguous to south bank	10,000
Red, white, and yellow fir, white cedar, myrtle, oak, etc	12,000
Total	80,000

The Del Norte Commercial Company saw-mill has a capacity of 35,000 feet of lumber per day, and has manufactured during the last season 3,200,000 feet. Bailey's mill, run by water-power, and situated on Smith's River, 4 miles from the entrance, has a capacity of 10,000 feet of lumber per day. A. Gorman & Co. shake mill, 6 miles from the entrance, has a cutting capacity of 12,000 per day, the two latter mills both lying idle.

The amount of butter shipped annually from Smith's River Valley is 250 tons.

Total exports of produce during the past year is estimated about 700 tons, and the imports of merchandise about 1,400 tons.

There are extensive chrome mines situated in the low divide district, also a number of valuable copper mines.

The Tyson Smelting Company, of Baltimore, Md., shipped annually from 1869 to 1873, 1,500 tons of chrome ore, hauling it on wagons through Smith's River Valley 25 miles to Crescent City.

In 1885 about 600 tons of ore was shipped by way of Smith's River. The salmon fisheries average 6,000 cases and 500 barrels per year.

ESTIMATE OF COST OF TRAINING-WALL.

Length of wall, 1,000 feet; width on top, 10 feet; mean width, 85 feet; mean height, 15 feet; stone in place, weight 160 pounds per cubic foot, and allowing for voids one-third.

68,000 tons at $1.50 per ton $102,000

A ledge of rock about 100 feet in height is available within a distance of 2,000 feet to obtain the rock for the training-wall in suitable dimensions.

Very respectfully,

A. BOSCHKE,
Assistant Engineer.

Capt. A. H. PAYSON,
United States Corps of Engineers.

SUPPLEMENTARY REPORT OF CAPTAIN A. H. PAYSON, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
San Francisco, Cal., June 11, 1887.

GENERAL: Under date of January 7, 1887, I submitted to the Department a report on the proposed improvement of the mouth of Smith's River, California.

This report has caused much hostile feeling in the community interested in having work done at this point, and I am now in receipt of a letter from a Mr. O. V. Wallace, which calls attention to certain inaccuracies in my report, of which letter it seems only just to forward the inclosed copy for file with the papers in the case.

The inaccuracies referred to are in the length of the stream itself, the depth on the bar, and the distance from the principal settlement in the valley to Crescent City Roadstead.

As regards the depth on the bar, it is shown on the Coast Survey chart as 4 feet, and it is merely an opinion whether it is ever less than this; so that in my report it would have been better to have given the minimum depth as 4 feet, instead of 3 feet to 4 feet, as stated.

The length of the stream I quoted from the report of the assistant engineer who made the examination, and who, it seems, did not include the lengths of the three forks which unite to form the main river.

The distance from Smith's River to Crescent City, given in my report as 8 miles, is really 16 miles, an error of my own, which I regret, because in connection with the rest of the report it has been interpreted, perhaps not unnaturally, as evidence of a bias on my part in favor of Crescent City and against Smith's River.

The inconveniences of Crescent City Roadstead as a shipping point and the onerous charges of the Wharf Company, are not overstated in Mr. Wallace's letter; and there is no doubt that the development of the Smith's River country will be hampered as long as Crescent City is to be depended upon as an outlet.

But the main points in my report of January 7, 1887, were that the construction of the proposed wall inside the mouth of Smith's River would require to be supplemented by costly works to seaward for control of the shoal and shifting bar channel before any substantial improvement could be had; and that in my opinion the expenditures necessary to that end were not now justifiable, and on these points I am not able to modify my originally expressed opinion.

I do not think, further, that it would be safe to expect to complete the inside wall for a less sum than that named in my original estimate.

Very respectfully, your obedient servant,

A. H. PAYSON,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

LETTER OF MR. O. V. WALLACE.

SMITH'S RIVER, CALIFORNIA, *May* 10, 1887.

DEAR SIR: Pursuant to our mutual understanding while in your office at San Francisco, I beg leave to submit to your notice and consideration the "memorial" that we forwarded to Congress, asking Government aid for the improvement of the mouth of Smith's River, and ask your indulgence while I briefly review some of the points of your adverse report thereon, and note the exceptions we have taken thereto.

You say "Smith's River is 25 miles long;" the North Fork is 22 miles long, the South Fork is 24 miles, and the Middle Fork is 12 miles long; and these branches uniting form the river proper, which is thus 25 miles long. You place the depth of water on the outside bar in the summer time at "from 3 to 4 feet;" while the shallowest measurement of which we have any record places the depth at 4 feet.

Besides, of all the vessels that have ever entered and departed from the mouth of the river, not one has ever found the bar too shallow; in fact we have never had the slightest degree of trouble arising from the bar.

The trouble is within the mouth of the river, where the sea has driven the current back over a rocky bed that can not wash out, nor the channel be otherwise deepened (save at an enormous expense), and is thus rendered unnavigable.

What we ask is that the proposed training-wall be constructed so as to drive the sea back and restore the bed of the river to its original condition, in its natural channel; it was in that condition and channel for a number of years, and while so there was an abundant depth of water; and while in such condition sailing vessels sailed in and out of the mouth, without other aid, with perfect impunity.

Do not these facts, then, successfully and effectually dispose of the argument against the construction of the proposed training-wall as far as the outside bar is concerned? And there remains only its estimated cost, which may be greatly reduced in view of the fact that not over one-third of its length is exposed to the action of the sea; therefore we simply ask a restoration of that condition, which it is admitted the proposed wall will effect.

Your report places the distance from Crescent City wharf to the principal settlement of Smith River at about "8 miles," while the actual distance is just double that

figure—16 miles. You sum up: "It is believed the cost of such works would not now be justified by the interests served."

In rebuttal, we would respectfully ask your careful perusal of the accompanying "statistics," and also the "memorial," inviting your particular attention to its introductory, the scope of country represented by the petitioners, the affidavit and the letter of transmittal, the press comments, the supplemental memorial of masters and owners of vessels, and especially the supplemental memorial of the principal business firms of San Francisco, under their own signatures.

You are already aware of the fact that there is no harbor between Humboldt Bay and Port Orford, a distance of hundreds of miles, the Crescent City landing being neither safe nor reliable; vessels lying at the wharf being compelled to put to sea in case of storm or even a rough sea running. No longer ago than the 7th instant, the schooner *Wing and Wing* was loosed from her moorings and driven ashore at that place, where she now lies on the beach. At the same date the steamer *Crescent City* made her appearance, but put to sea again without so much as landing her passengers, who were compelled to remain on board till yesterday, when they were finally landed, and the steamer, without discharging her freight or any portion of it, immediately put to sea again, where she is now cruising about, awaiting a favorable chance to come to the wharf; and this is not an exceptional instance, but has been repeated time and again, especially during the winter season, sometimes lying out a week or more. Do you think the outlook for our intercourse and traffic with the outside world very encouraging, in the face of these facts, even should the "broad-gauge railroad" that you allude to in your report as the sovereign panacea for our pent-up longings be extended across the river and into our valley?

Besides, the Crescent City wharf monopoly has always compelled shippers to pay a heavy tribute, the wharf charges being exorbitant, in some instances greater than the cost of transportation of the article by steamer the entire distance from San Francisco; so even in the event of the completion of said "railroad" the situation, as far as shipping facilities are concerned, will be but little improved.

We ask a careful consideration of these facts, and trust they may be potent enough to induce you to recede from the adverse opinion you have held in reference to the proposed "Smith river improvement," and pray that you may see fit to so correct or modify your report as to render it favorable instead of unfavorable; and that we may obtain what we so much stand in need of, a good, permanent, and reliable shipping point right at our own doors, and which has been aptly and correctly characterized by Mr. Boschke as "the natural outlet for this section of country."

Begging pardon for intruding to such an extent on your time and patience, and asking at your hands a careful consideration of the merits of the case, and that you will preserve and return the inclosures at your convenience (either direct or through Mr. Deming), and that I may have the pleasure of receiving at an early date a favorable reply, I subscribe myself,

Yours, truly,

O. V. WALLACE.

Captain PAYSON,
Corps of Engineers.

PRELIMINARY EXAMINATION OF CRESCENT CITY HARBOR, CALIFORNIA, WITH A VIEW TO A SEA-WALL FROM BATTERY POINT TO FLAT ROCK.

UNITED STATES ENGINEER OFFICE,
San Francisco, Cal., January 19, 1887.

GENERAL: In compliance with instructions contained in the Department's letter of October 28, 1886, I have the honor to report as follows concerning Crescent City Harbor, California, with view to a sea-wall from Battery Point to Flat Rock.

Flat Rock lies about 1,000 feet from the mainland at Battery Point, and in about 2 fathoms at low water. Between the point and the rock is a reef which goes almost bare at low water and which formed the support of the old wharf now carried away.

A new wharf has been built to the north and east of the old one, as approximately shown on the chart herewith; and should the sea be prevented by a wall from breaking across the reef between the point

and Flat Rock some additional protection would doubtless be given the new wharf.

Owing to the slight depth of water in which the wall, as contemplated in the act, would have its outer end it would not when completed appreciably improve the shelter now naturally afforded to the anchorage, and from its faulty direction it would be useless as the starting point of a breakwater designed to afford a radical improvement, should such a measure ultimately be decided upon. The cost of the work would be about $140,000; but for the reasons above given I should recommend that if any work be undertaken for this harbor it be directed to the construction of a wall between the Light-house Island and Steam-boat Rock. Such a wall would give in itself a valuable addition to the existing shelter, and form part of any general plan for making the roadstead secure in all weathers for a small number of vessels.

The cost would be in the neighborhood of $1,500,000 for the wall carried to Steam-boat Rock, and this would probably make it safe for one or two small vessels to lie in the roadstead in all weathers at properly laid permanent moorings. The commerce benefited would be local only, for reasons fully set forth in the Report of the Board of Engineers on Harbors of Refuge (Report Chief of Engineers, 1881), showing the unfitness of Crescent City Harbor for a general refuge for Pacific coast commerce.

Admitting that the local commerce is important enough to justify some expenditure for its better protection, I am not prepared to believe that a work of such magnitude as will alone effect a material improvement is now warranted by the circumstances of the case.

Sufficient data is already available for a detailed project without further survey or examination.

This report has been withheld in the hope of procuring detailed statistics of the last year's business of Crescent City Harbor, for which repeated application has been made since early last December. These statistics have not yet been received, so I deem it best to forward my report without them and furnish them later should they be obtained.

Very respectfully, your obedient servant,

A. H. PAYSON,
Captain of Engineers.

CHIEF OF ENGINEERS U. S. A.

STATISTICS OF TRADE FOR NINE MONTHS ENDING DECEMBER 31, 1886.

Lumber	feet	16,895,000
Assorted merchandise:		
Up	tons	3,500
Down	do	1,529
Passengers (by one steamer):		
Up		653
Down		543

Passengers were also carried by schooners and by two other steamers which visit the port, but no accurate account could be obtained as to the number.

During several years preceding the last shipments of chrome have averaged 3,000 tons per year, but the discovery of other mines in southern California have for the present suspended the business.

PRELIMINARY EXAMINATION OF JAMES (DAKOTA) RIVER, DAKOTA TERRITORY.

UNITED STATES ENGINEER OFFICE,
Bismarck, Dak., November 30, 1886.

SIR: I have the honor to submit the following report and accompanying tracing* relating to the preliminary examination of James River, Dakota Territory, made in pursuance of your printed circular letter of October 28, 1886, and in accordance with section 6 of the river and harbor act of August 5, 1886:

Under the name of Dakota River an examination of the James River was made by direction of Maj. F. U. Farquhar, Corps of Engineers, in October and November, 1874.

* * * * * * *

This report was printed in House Ex. Doc. No. 75, Part 1, Forty-third Congress, second session.

* * * * * * *

As it fully described the physical features of the James River and the bordering country, I have confined my attention to an inspection of the river at the most important points between Jamestown, on the Northern Pacific Railroad, and the mouth of the river, and to a study of the commercial needs of the valley, of its present transportation facilities, and of public sentiment with reference to Government aid towards the improvement of the navigation of the James.

I began my inquiry by addressing a letter to the Hon. O. S Gifford, Territorial Delegate to Congress. He could give me no information as to any parties residing in the valley who were anxious for river improvement, except as to one man at Columbia, who owned a flouring mill, and thought a higher and stronger dam to raise the water in Lake Columbia (Tehanchicahah) would improve his water-power, as it undoubtedly would.

At Columbia I ascertained that the last Territorial legislature had petitioned Congress to appropriate $25,000 for the improvement of the James River above Columbia. This was evidently in the interest of the milling people, to give them increased water-power.

* * * * * * *

I also ascertained that some years ago, about 1880 or 1881, a small stern-wheel steamboat had been taken by rail in sections to Jamestown, Dak., and there put together, and from there sent down the James to Columbia at high water; that it had made a few trips, for several seasons, from Columbia some 60 miles up the river, and that it had been abandoned as soon as railroads were built into this portion of the valley. I saw it lying on the bank at Columbia dismantled and wrecked. It was about 120 feet long, some 20 feet beam, and probably drew 24 inches when loaded.

As far as I could learn this was the only boat that ever navigated any portion of the James. There may have been, possibly, a boat or two, a few miles up the river from the mouth, at high water, some years ago, when there were more boats navigating the Upper Missouri, but I could not ascertain that such had been the fact.

* * * * * * *

Within the past five years this valley has increased very rapidly in population, in cultivated farms, and in thriving towns and villages; all

* Omitted.

due to the rapid and extensive development of the competing lines of railroads with which the valley is fairly "gridironed."

This increment of prosperity is still going on at an undiminished rate. The people are law-abiding, industrious, enterprising, and intelligent, and the valley bids fairly to be soon the site of a large and wealthy community.

The following will show the commercial importance of the valley. The latest reliable information is to October, 1885, and is compiled from the 1885 report of Hon. Gilbert A. Pierce, Territorial governor, to include the half of Stutsman County south of the Northern Pacific Railroad, and all the counties bordering on or through which the James River flows, down to the mouth:

Population, 1885, 75,000; now about 100,000.

Improved farms	acres	1,216,000
Value of farms		$31,191,000
Value of implements and machinery		$2,561,000
Value of live stock		$6,029,000
Value of farm produce		$6,088,000
Grain produced in 1885	bushels	12,519,000
Flaxseed	do	590,000
Potatoes	do	622,000
Butter	pounds	1,619,000
Hay	tons	198,000

The grain consisted of—wheat, over 6,000,000 bushels; of oats, over 4,000,000; of corn, nearly 2,000,000; and of barley, rye, and buckwheat. There were also considerable productions of eggs, cheese, wool, etc.

The above statistics for 1885 can, with safety, for 1886 be increased 20 per cent.

Of the imports no reliable statistics could be gathered, but they consist principally of coal, lumber, farming implements, and general merchandise.

The great commercial needs of the valley are lower import rates on fuel and lumber and lower export rates on grain. Fuel is now brought from Chicago, Duluth, and Superior City. The present railroad rates are $5 per ton for hard coal and $4.50 per ton for soft coal from Chicago to the center of the valley. Assuming the best possible slackwater navigation for the James, giving 4 feet, fuel would have to be brought up the Missouri from its mouth a distance to the center of the James River Valley of over 1,500 miles. It would be up-stream navigation, and on account of the crookedness and narrowness of the James, the tows would have to be small, as also the cargoes. Freight on coal from Louisville to Memphis, in large tows and cargoes, and all down-stream navigation, a distance of only 500 miles, adds $1.50 per ton to the price of coal. It is fair to assume, considering the all-up-stream navigation, the strong currents of the Missouri, the crooked channels of both rivers, the bad sand-bars, and the consequent high rates of insurance, that coal could not be put down at the center of the valley for a less rate than now charged by the railroads.

The export rates on grain from the center of the valley to Chicago and Milwaukee run from 28 cents to 30 cents per 100 pounds, and to Minneapolis and Saint Paul, 23 cents per 100 pounds.

With the navigation aforesaid on the James grain might be delivered at Saint Louis at somewhat cheaper rates than the above, but the bulk would still go by rail from the James River Valley, as it does to-day from Saint Louis, rather than via the river and Gulf; but, nevertheless, during the very short navigation season railroad rates would be materially lowered to bid for the entire transportation of the crops.

This is the one and only advantage to be derived from a navigable condition of the James. The actual amount of benefit, however, would be a very indeterminate quantity, and certainly not commensurate with the great cost of improvement, were any practicable.

The accompanying tracing* will show how abundantly the valley is now provided with transportation facilities, and how it is dotted over with prosperous towns and villages.

Ten railroads now come into the valley at least as far as to the James River and at right angles to it and parallel to the current of import and export trade. Another branch at a right angle is within 30 miles of the river.

There is a continuous line of railroad parallel and near to the river; throughout its length and for the greater portion of this distance there are two parallel roads, while over a distance of 70 miles there are three parallel roads, * * * all rivals, and each seeking every year strenuously to increase its mileage in the valley, and the volume of its business. With this condition of affairs the present rates can not long be maintained even by "pooling."

So much for the commercial needs and transportation facilities of the valley.

Next as to the feasibility of the improvement of the James River.

In my opinion no general through improvement, giving access to the Missouri River, is practicable. It is barely possible that, with an extraordinary and totally unreasonable expenditure, a slackwater navigation of locks and dams might be secured, though the engineering difficulties at the mouth are almost insurmountable. Assistant Ainsworth, in his report to Major Farquhar, says of the mouth of the James:

> The Missouri at the mouth of the Dakota (James) was in good navigable stage; but the appearence of the latter was any thing but promising, as its mouth had been sealed up by the deposits of the Missouri while in flood. The river here was from 75 to 100 feet wide and from 3 to 8 inches in depth, with considerable fall over a bed of mud 3 feet deep and of the consistency of mortar.

I found in November, 1886, still less water and considerably more mud. If it were possible to build a lock here, dredging in the tail bay would have to be kept up continuously to keep open the entrance.

The James is probably one of the most crooked rivers in the world. It is over 1,000 miles in length in an air line of 300 miles. This fact would add immensely in cost to any scheme of slackwater navigation.

Assuming the engineering difficulties overcome, there is a very strong and reasonable doubt whether there would be enough water to supply even a limited number of lockages per day. Assuming sufficient water, the canal could be used only six months in the year. From the middle of October to the middle of April it would be liable to be frozen.

Another item of expense would be the actual damages to be paid by the United States to corporations, counties, and riparian owners, for obliging them to put draws in bridges and to remove dams, or for lands overflowed on account of new dams. There are now across the James some twenty-one railroad bridges and about one hundred common road bridges, all founded on mud-sill trestles or on piles. There are also about twelve mill-dams.

* * * * * * *

Assuming all the above difficulties as overcome, I think neither the people of the valley in particular nor of the country in general would derive any practicable benefit from the improvement, for, as I said be-

*Omitted.

fore, the channel of commerce is east and west, while the channel of the James is north and south, and a parallelism of orientation can never obtain. The James can not compete with the extensive system of railroads invading the valley in every direction. It will always be a valuable stream to the riparian residents as a source of water supply for domestic and sanitary purposes, and for affording water-power for mills and factories, but for no other purpose will it be valuable.

In a number of places, extending in reaches of from 10 to 50 miles, the slope of the surface is very slight and the water could be backed up by dams of low relief and comparative small cost, so as to afford a navigable channel of 3½ to 4 feet over these reaches, but these would lie wholly within the Territory and could have no navigable connection with each other or with any other Territory or State, and probably, therefore, could not legitimately be the subject of legislation by Congress; or, if so, the interests to be subserved would be too insignificant to warrant the expenditure.

In conclusion, I would say that I fully agree with Major Farquhar, "that the river" (the James) "can not be made navigable by the ordinary means of improving the natural channel, for the reasons that there is not a sufficiency of water and that the river is too tortuous."

In my opinion, the James River, in Dakota Territory, is *not* "worthy of improvement," and I would recommend that no survey be made.

I remain, general, very respectfully, your obedient servant,

CLINTON B. SEARS,
Captain, Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF TAMPA BAY, FLORIDA, INCLUDING HILLSBOROUGH RIVER UP TO THE CITY OF TAMPA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Resurvey of Tampa Bay, including Hillsborough River up to the city of Tampa. * * *

An examination of this harbor showed that the existing Coast Survey charts are sufficiently accurate for all needed purposes. In a personal interview with the members of the Board of Trade of the city of Tampa, it was stated that what was desired was a plan of improvement which would give reasonable promise of permanency, and would afford a channel from 14 to 16 feet deep at mean low water.

Plans were submitted to the Chief of Engineers in the annual report on this improvement, dated June 30, 1886, which it is believed will give a permanent 9-foot channel. Once this has been obtained it will be easy to enlarge it to a greater depth if it then be thought desirable. So far the appropriations have never been sufficient to obtain the 9-foot channel called for by the approved project. Owing to the greatly increased cost of a deeper channel I believe that the interests of commerce do not now demand more than a permanent channel of the dimensions called for by the existing project.

Respectfully submitted.

W. M. BLACK,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF CHARLOTTE HARBOR, INCLUDING SAN CARLOS BAY, FLORIDA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Charlotte Harbor, including San Carlos Bay. * * *

Examinations were made of Charlotte Harbor in 1879 by Mr. J. L. Meigs, assistant engineer, under the direction of Major A. N. Damrell, Corps of Engineers, and in 1884 by Capt. Wm. T. Rossell, Corps of Engineers, as published in the Annual Reports of the Chief of Engineers for 1880 and 1885, in Appendix K 17 and Appendix O 20, respectively. Charlotte Harbor and San Carlos Bay afford the most southernly good harbor on the west coast of Florida. Land in the vicinity is fast being settled and the importance of the bay is increasing daily. As yet there is but little commerce, very little produce being raised and the principal imports being building materials. It has not been possible to obtain exact figures. A small steamer makes three trips per week between the railroad at Cleaveland, Punta Rassa, and Fort Myers, on the Caloosahatchie River, touching at intermediate points, and amply satisfies existing needs.

On Charlotte Harbor the Florida Southern Railroad has founded the town of Punta Gorda, its present terminus. "Saint James City" has been laid out on Pine Island, in San Carlos Bay, and is attracting settlers.

At present 11 feet can be carried at low water through Charlotte Harbor into mouth of Pease River, opposite the wharves, at Punta Gorda, and 11 feet through San Carlos Bay to the wharf at Pine Island. The average rise of the tide is 1.14 feet in Charlotte Harbor, and 1.34 feet in San Carlos Bay. The average draught of steam and sailing vessels in the Gulf trade is less than 10 feet. When the country becomes more settled the interests of commerce will probably demand that a deep channel be provided for one of the ports of this harbor—Punta Gorda, Saint James City, or Punta Rassa.

It is my opinion that the existing facilities are sufficient to satisfy all legitimate demands of the present commerce.

I do not regard these harbors as now worthy of improvement by the United States.

Respectfully submitted.

W. M. BLACK,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF CLEARWATER HARBOR, INCLUDING ANCLOTE AND ST. JOSEPH'S BAYS AND THE NARROWS INTO BOCA CIEGA BAY, FLORIDA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Clearwater Harbor, including

Anclote and St. Joseph's Bays and the narrows into Boca Ciega Bay. * * *

An examination and survey of Clearwater Harbor, including Anclote and St. Joseph's Bays, was made in January, 1885, under the direction of Capt. R. L. Hoxie, Corps of Engineers, as reported in Appendix P 15, Annual Report of the Chief of Engineers, United States Army, 1885. For a detailed description of this harbor I would respectfully invite attention to that report.

A narrow, rocky channel, "The Narrows," connects Clearwater Harbor with Boca Ciega Bay. This is very shallow and contains only from 1 to 3 feet of water. Boca Ciega Bay in its physical characteristics resembles Clearwater Harbor. It is generally shallow, varying in depth from one-half to 5 feet, with a few deeper holes. At its south end a channel runs from deep water of the gulf to Point Pinellas, obstructed at its outer end by a bar having only 6½ feet on its crest. Along the narrows and bay are the following settlements: Anona, John's Pass, Bonifacia, and Pinellas, containing in all about 200 inhabitants. These towns, with Tarpon Springs, Anclote, Yellow Bluff, Dunedin, and Clearwater Harbor, on Anclote and St. Joseph's Bays, and Clearwater Harbor, have a total population of about 2,000.

The steamer *Governor Safford* makes semi-weekly trips each way between Cedar Keys and Tampa. At Anclote she is met by the steamer *Mary Disson*, which receives at that place the passengers and freight for all towns north of the narrows. The other places are served by sailing vessels, meeting the *Safford* or going direct to Tampa or Cedar Keys. During the past year the *Mary Disson* carried about 700 tons of freight and about 300 passengers.

The town of Tarpon Springs is growing rapidly, and is becoming a popular winter resort. The bayou (Anclote River, not included in bill) which connects it with Anclote Bay is badly obstructed by narrow oyster bars. With this exception the settlements above named have all the commercial facilities required by their present needs. I do not deem these bays worthy of improvement at present.

I have been unable to obtain any exact commercial statistics.

Respectfully submitted.

W. M. BLACK,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF WAKULLA RIVER, FLORIDA, FROM ITS MOUTH TO WAKULLA SPRINGS.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Wakulla River, from its mouth to Wakulla Springs. * * *

The Wakulla River has its source in the Wakulla Springs, in Wakulla County, Fla., and flows southeast into the St. Mark's River at Saint Mark's, Fla. Its length is about 12 miles; its width varies from about 50 to 200 feet, and the depth from 12 feet to 1 foot. The water is clear. Excepting where the cross section is contracted, the flow is sluggish. The bottom is usually sand, overlying rock. In the deeper

places the rock is exposed. For 2 miles from its source the stream is so broad as to become almost a marsh at low water, with a soft, muddy bottom, badly obstructed by grass, lily pads, and weeds. Through this broad bed there are various channels in the soft mud, having a depth of from one-half to 2 feet. The banks are well wooded, and generally low and swampy for much of the distance, being submerged at high water. The influence of the tide is felt for almost the entire length of the river. The river is crossed by two wooded trestle bridges, one 4 and one 8 miles from its mouth. The floor beams of these bridges are about 6 feet above the low-water surface. At one time the country in the vicinity was all under cultivation. Tar and turpentine were manufactured and carried down in flats to Saint Mark's. Now the population is very spare, and but few products are raised.

It is desired by some of the property owners in that vicinity to have the stream deepened to permit navigation for boats drawing 6 feet of water. The objects are to permit the inhabitants of the country west of the Wakulla to obtain and ship their goods via the railroad at Saint Mark's and the river (thus saving 15 miles of hauling over bad roads), and to make an easier route for tourists to Wakulla Springs, with the hope of building up a resort there. A river boat drawing not more than 2 feet of water would fill all present needs, and could be now run on the river if the bridges were suitably arranged, and a small sum expended in clearing out the grass and a few snags from one channel in the upper river.

There is no commerce on the river at present, and I was unable to find any general demand for its improvement.

In my opinion, the facilities are sufficient for the present commercial necessities, and the river is not now worthy of improvement by the General Government.

Respectfully submitted.

W. M. BLACK,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF THE CHANNEL FROM HAUL-OVER, ON INDIAN RIVER, TO GILBERT'S BAR, FLORIDA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Survey of the channel from Haul-over, on Indian River, to Gilbert's Bar. * * *

A careful examination of this river was made between the limits named. It was found that the charts of the United States Coast and Geodetic Survey, numbers 463, 464, 464 *c*, *d*, *e*, *f*, *g*, *h*, and 162, covering the entire distance, are accurate and sufficiently detailed for all general purposes. No fault is found with them by the pilots navigating the river. I do not, therefore, consider a resurvey necessary.

From interviews with some of the leading inhabitants of the district, I found that what is desired is the improvement of the lower river by removing oyster-bars and straightening the channel.

Over 6 feet of water exists in the channel from opposite the "Haul-over" to a point 6 miles above the mouth of the San Sebastian Creek,

a distance of 55 miles. From there to the Indian River Inlet the average channel depth is 5 feet, with numerous bars having a least depth of from 3¼ to 4 feet. From Indian River Inlet to a point 2⅜ miles north of Gilbert Bar there is again an average depth of more than 6 feet.

The steamer *Indian River*, drawing from 2 to 3 feet of water, makes three trips per week over the lower river between Eden and the railroad at Titusville. She has no difficulty in carrying all the freight offered. Owing to the very crooked channel near "the Narrows," she does not run at night through this part of the river. By the aid of range stakes and a powerful head-light this delay could be avoided. The country is fast filling up, and the shipments of fruits and vegetables are increasing so rapidly that in the near future the needs of commerce may be sufficient to warrant the straightening of the channel.

I do not regard this river as being worthy of improvement now.

I have been unable to obtain even an approximate estimate of the commerce.

Respectfully submitted.

W. M. BLACK,
First Lieutenant of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF FLINT RIVER, GEORGIA, FROM MONTEZUMA TO OLD AGENCY.

UNITED STATES ENGINEER OFFICE,
Montgomery, Ala., February 7, 1887.

GENERAL: In compliance with circular letter from office of Chief of Engineers, requiring preliminary examination or survey of Flint River from Montezuma to Old Agency, Ga., I have caused a preliminary examination to be made of Flint River from Montezuma to Old Agency, Ga., for the purpose of ascertaining whether this portion of the Flint River is worthy of improvement and the probable cost of making the survey and report contemplated by the river and harbor act of August 5, 1886, including the project and estimate of cost of improvement proper to be made.

The examination has been made, under my direction, by Assistant Engineer P. M. Slaughter, in local charge of the improvement of Flint River, and appears to indicate that this portion of Flint River is worthy of improvement, provided that the bridges which now obstruct it are furnished with suitable draw-spans.

Mr. Slaughter submits a rough estimate of the cost of improvement ($25,000) of the 50 miles of river, more or less, under consideration, and estimates the value of real and personal property in the counties interested in the proposed improvement at $7,612,941. He submits a letter from Messrs. John F. Lewis & Son, of Montezuma, Ga., in which it is estimated that the improvement of this section of Flint River will afford transportation annually for 3,000 bales of cotton, 500 tons of fertilizers, 200 barrels of sirup, and large quantities of general merchandise.

I am of the opinion that a survey which can serve as a basis for a project and estimate of cost of improvement proper to be made will cost about $450, and this expenditure is recommended.

Very respectfully, your obedient servant,

R. L. HOXIE,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. P. M. SLAUGHTER, ASSISTANT ENGINEER.

In obedience to the instructions contained in your letter of November 20, 1886, as soon as the river was at a suitable stage I went to the point on Flint River known as the Old Agency in Crawford County, Ga., so called on account of its having been a Government station and reservation. The main county road from Columbus to Macon, Ga., crosses the river at this point; distance to Macon, 33 miles. It was once the head of navigation, and two steamboats were built there. The river, for 5 miles above the Old Agency, presents no obstacles to navigation.

At the time the examination was made the water in the river was 18 inches above low water. I ran a line of soundings down the middle of river, thus giving the average depth of the water. The soundings given are reduced soundings.

FIRST DIVISION.

From the Old Agency to the crossing of the Southwestern Railroad, near the town of Reynolds; distance, estimated, 15 miles.—The river at the agency is about 150 feet wide, 3½ feet deep, and flows in a southerly direction with a 1-mile current. About one-quarter of mile below the starting point (the ferry) the first obstructions are found in the form of bowlders, which are scattered across the channel with 3½ feet of water between. These are the only rock obstructions to be met with on this portion of Flint River now under examination. The river for the first 3 miles is comparatively straight, running through a well-cultivated country, and is free of all obstructions.

For the next 6 miles the river is narrowed to 125 feet, with long bends, and scattering snags are found in the crossings, the soundings indicating plenty of water, except at one place, a sand-bar, on which only 2 feet was found. The same remark applies to the next 6 miles, only the number of snags in the bends, which are shorter, has increased. This brings us to the railroad bridge, and end of the first division. Here the river is spanned by a covered wooden lattice bridge about 25 feet above low water, presenting a serious obstruction to navigation. The rise of the river at this point does not exceed 20 feet, as the high-water area extends to the eastward to a distance of 2 miles.

About 2 miles west of this bridge, on the railroad, is the town of Reynolds, with a population of 600; receipts of cotton 3,000 bales.

SECOND DIVISION.

From the railroad bridge to Hollinshead's Ferry, 22 miles.—Soon after leaving, the river narrows to 100 feet, with a depth of from 5 to 10 feet, with a current increasing to 2 miles per hour. For the first 8 miles the bends are long, and long straight reaches intervene; these 8 miles are reasonably free of snags; the river running through a cultivated country.

For the next 6 miles the river, retaining its width and depth, with a 2-mile current, runs alternately through cleared and timbered lands. Through the timbered lands the bends are short and badly obstructed with snags.

For the next 8 miles the river narrows to 80 feet, and with an accelerated current flows through a heavily-timbered district, making very short bends, which are badly obstructed with timber from the caving banks. This is the worst-obstructed section on the river. At the end of this section is Hollinshead's Ferry.

THIRD DIVISION.

From Hollinshead's Ferry to Montezuma.—Soon after leaving the ferry the river widens to 150 feet, with no perceptible current, and resembles a lake or succession of lakes for over 4 miles; soundings indicating 4 feet. At the end of these lakes the river narrows up to a width of 80 feet, and with a 2½-mile current sweeps through a low, heavily-timbered country, making short caving bends, which are badly obstructed with fallen timber. It continues this way for 3 miles to the mouth of Whitewater Creek, the largest tributary met with. Just before reaching the mouth of the creek the river makes an abrupt bend to the east, returning to within 200 yards of its starting point. I estimate the length of the bend to be about 1 mile. This bend is full of small timber; the width of the stream 60 feet, and depth 6 feet. Through the narrow neck of land at the head of terminus of the bend a small cut-off was trying to form, but was prevented by the heavy growth of gum trees. In case the river is ever improved this cut-off should be closed.

From the mouth of Whitewater Creek to the upper ferry, a distance of 4 miles, on the left bank, the country is high and rolling; consequently the bends are longer

and less obstructed. Just below the ferry the river sweeps around a long bend to the west for a distance of 2 miles. At the foot of this bend the river is crossed by the Southwestern Railroad on a wooden lattice-covered bridge about 30 feet above low water. This bridge forms a serious obstruction to navigation at low water, and totally prohibits it at high water. Two hundred yards below the bridge is the head of the improvement of Flint River, between Albany and Montezuma. I estimate the entire distance from the Old Agency to Montezuma at 50 miles.

The only obstruction to navigation, besides the few bowlders at the Agency, are snags and overhanging trees, the removal of which would cost $25,000, as follows:

Cost of snag-boat with steam derrick, complete	$5,000
Removal of snags from 50 miles of river, at $400 per mile	20,000
Total amount required	25,000

The value of real and personal property in the counties interested in the proposed improvement, as derived from the comptroller-general's report for 1866, is as follows:

Upson	$1,504,072
Crawford	761,163
Taylor	968,101
Macon	1,611,039
Houston	2,518,101
Talbot	1,250,465
Total	7,612,941

According to the census of 1880, these counties produced 58,417 bales of cotton, divided as follows:

	Bales.
Upson	8,540
Crawford	6,765
Taylor	4,854
Macon	8,834
Houston	19,099
Talbot	10,325
Total	58,417
Total value	$2,920,850

I recommend this portion of Flint River as worthy of improvement for the following reasons:

(1) The large value of property interested, as officially stated.

(2) The large amount of timber, both oak and pine (now valueless), that will be rendered available.

(3) The stimulus that will be given "to the cultivation of the rich alluvial lands that border the river" by means of a cheap water transportation.

(4) The check upon high railroad freights by means of a competing water line.

(5) Because the planters on the river for the most part have to haul their products over a bad road a distance of from 20 to 30 miles to market.

(6) The small amount of cost as compared to the benefits to be derived.

The project recommended is the removal of the bowlders at the Old Agency, the removal of snags, and the cutting of the overhanging timber along the banks of the stream. This would afford navigation for light-draught steamers for nine months in the year.

The cost of an instrumental survey, should it be found necessary to make one, would be $880.

The inclosed letter* shows the present and expected commerce.

Very respectfully, your obedient servant,

P. M. SLAUGHTER,
Assistant Engineer.

Capt. R. L. HOXIE,
Corps of Engineers, U. S. A.

* Omitted.

PRELIMINARY EXAMINATION FROM DOBOY ISLAND TO DOBOY BAR, GEORGIA.

UNITED STATES ENGINEER OFFICE,
New York, December 11, 1886.

GENERAL: By Department letter dated September 27, 1886, I was informed that the river and harbor act of August 5, 1886, provides that a preliminary examination should be made "from Doboy Island to Doboy Bar, Georgia," and that this work had been assigned to my charge. I was further instructed to report, after completing the examination, whether the locality named is considered worthy of improvement, with a view of having it surveyed.

The examination here ordered was made under my direction during last month, and I have the honor to submit the following brief report:

Doboy Island is situated at the mouth of Darien River, the northerly main branch of Altamaha River, about 12 miles below the town of Darien. The village of Doboy is located upon the western shore of the island; vessels from the port of Darien complete their cargoes here. Doboy Island is separated from Doboy Sound by Commodore Island.

The channel of entrance across Doboy Bar is substantially a southeasterly prolongation of the axis of Doboy Sound. I have already stated in my last annual report of operations for improving Altamaha River, Georgia, that shoaling has taken place on the bar since 1875, the draught of vessels that could cross it being reported to have diminished from 22 feet in that year to from 18 to 18½ feet in 1885.

By comparing the latest Coast Survey chart (1886) of Doboy Bar with the results of the recent examination, the principal changes noted are as follows:

Formerly the channel crossed the bar proper in two branches; the north branch, running nearly due east, had a minimum low-water depth of 8 feet; the south branch, running in a more southerly direction, had practicable low-water depths of 14 feet. The mean rise and fall of the tide on the bar is 7.2 feet.

The observations taken in November, 1886, show that the north channel has generally maintained its direction, but has deepened about 2½ feet, and the distance between its inner and outer 14-foot low-water curves has diminished about 1,850 feet. The outer portion of the south channel has moved about 1,000 feet south of its former position; its inner portion has not changed, but the present minimum low-water depth is only 11.1 feet; a reduction of 3 feet since 1868.

The "North Breakers" Shoal has moved to the south and west, across the old south or main channel of entrance; at places of 15 to 16 feet depth some eighteen years ago there are now found only 8 or 9 feet. A new channel seems to be forming, however, to the north of and about 2,000 feet from it; the 14-foot curve has pushed here about 3,000 feet seawards, and the distance between the easterly end of this pocket and the outer 14-foot curve is at present only 1,400 feet.

Lieutenant Carter states that for vessels engaged in the coasting trade, whose average draught is about 15 feet, the present depth of water on the bar is sufficient, but in carrying lumber and timber it is often desirable to load to 18 or 20 feet, or even to greater depths. The bar in its present condition will not afford such draughts.

The town of Darien has about 2,000 inhabitants. It is an important shipping port, especially for the lumber coming down the Altamaha River. Shipping merchants have repeatedly complained of the want

of sufficient depth on Doboy Bar, preventing vessels of deep draught to take full cargoes at Doboy, compelling them to load at increased cost at Sapelo, Saint Simon's, and Brunswick, thus putting them at a disadvantage in their competition with other ports in the neighborhood. Statistics of the commerce of Darien were given in my report of a survey of Darien Harbor, dated January 30, 1885, printed as Appendix N 16, Annual Report of the Chief of Engineers for 1885, and in House Ex. Doc. No. 260, Forty-eighth Congress, second session, also in my annual report of the improvement of Altamaha River, Georgia, for the fiscal year ending June 30, 1886, while others are given in letters and statements inclosed in Lieutenant Carter's report of the recent examination.

I am not prepared, however, to recommend that a survey of Doboy Bar be made with a view of designing a project for its permanent improvement. Suitable works for that purpose would undoubtedly be quite expensive, and their cost would not, in my opinion, be justified by the present magnitude of the interests to be subserved thereby.

By the river and harbor act of August 5, 1886, an appropriation of $20,000 was made "for improving Altamaha River, Georgia, half of which to be used on Doboy Bar, or so much thereof as may be necessary." I coincide with the suggestion made by Lieutenant Carter, that a small amount of the appropriation be expended in hydraulic excavation or propeller sluicing, so as to create a greater depth of water on the bar, improving the new channel which seems to be in process of formation, as stated above.

I recommend, therefore, that so much of the sum of $10,000, allotted for Doboy Bar, as may be deemed necessary, may be expended for its improvement by methods here indicated.

The report of First Lieut. O. M. Carter, Corps of Engineers, with letters addressed to him, and a chart of the examination of Doboy Bar, are transmitted herewith.

Very respectfully, your obedient servant,

Q. A. GILLMORE,
Colonel of Engineers,
Bvt. Maj. Gen., U. S. A.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF LIEUTENANT O. M. CARTER, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Savannah, Ga., December 6, 1886.

COLONEL: In compliance with your instructions of the 8th ultimo, I have the honor to submit the following report of a preliminary examination from "Doboy Island to Doboy Bar."

Doboy Island is situated upon the coast of Georgia, about 50 miles by the coast line south of the Savannah River. It lies at the mouth of Darien River, about 12 miles measured along the channel, below the village of Darien, and is separated by Commodore Island from Doboy Sound.

Darien River is the northerly main branch of the delta portion of the Altamaha. Through it passes the greater portion of the Altamaha River commerce. Upon the western shore of Doboy Island is situated the village of Doboy, where vessels shipping from the port of Darien receive their deep-draught loads. From Doboy to the sea the only obstruction to navigation is Doboy Bar.

The only known survey of this bar is that made by the United States Coast Survey in 1868, from which the shore-lines and soundings in black on the chart, forwarded herewith, are taken. At that time the bar, the general direction of which has not since changed, extended ESE. from the southern end of Sapelo Island for a distance of about 3½ *miles, then in a southerly* direction about parallel to the coast line

for nearly 3 miles, connecting with the shoals which extended ESE. from the northern end of Wolf Island. From the mouth of Doboy Sound, between Sapelo and Wolf islands, where low-water depths of from 4 to 6 fathoms were found, the channel extended ESE. between the sand spits forming the shore-arms of the bar, for a distance of about 2¼ miles, then divided and crossed the bar in two branches; the northern one having a direction about E. by N. with minimum low-water depths of 8 feet, and the southern one extending SE. ¼ S. about 1¾ miles, and then E. by S. to sea, with minimum low-water depths of 14 feet. The mean rise and fall of tide being 7.2 feet, vessels drawing 20 feet were able to cross the bar in calm weather at mean high water, and it is claimed that on high water of spring tides vessels of 22 feet draught have been taken from Doboy to the sea.

Since the date of that survey the bar has shoaled greatly. A preliminary examination of this bar, from the bell-buoy seaward, was made by me in November, 1886, and some of the soundings taken then are shown in red on the accompanying chart. By referring to this it will be seen that the north or slew channel has deepened about 2¼ feet, while the south or main channel has shoaled about the same amount.

The general direction of the north channel has not changed, but the distance along that line between the inner and outer 14-foot mean low-water curves has diminished about 1,850 feet; the inner pocket having shifted to the east, and moved seaward about 1,500 feet, while the outer curve has moved shoreward about 350 feet. The south or main channel has shoaled about 3 feet since 1868, its present minimum low-water depth being 11.1 feet.

From 1868 to 1879 the direction of this channel did not sensibly change.

At present its outer portion is about 1,000 feet south of its former position. The inner portion has not changed.

The "North Breakers" Shoal has moved to the south and west, and pushed entirely across the old channel, separating the inner and outer 14-foot mean low-water curves by a distance of about 2,000 feet. On the line of the old channel the present depths are from 8 to 9 feet as compared with 15 and 16 feet eighteen years ago. About 2,000 feet to the north of this, however, the depth of water is increasing, and a new channel is in process of formation. Beginning at a point about 1,000 feet to the north of black Bouy No. 1, the 14-foot mean low-water curve has extended ESE. about 3,000 feet, the distance from the end of this pocket to the 14-foot curve on the outer slope of the bar being at present only 1,400 feet.

The material composing this bar is a mixture of fine sand and fragments of shells, and when loosened and thrown into suspension is easily moved.

For vessels engaged in the coasting trade, whose average draught is about 15 feet, the present depth of water on the bar is sufficient, but in exporting lumber and timber it is often desirable to load to 18 or 20 feet, over, or even to greater depths.

I submit the following letters and extracts:

FROM LETTER OF MR. R. K. WALKER, TIMBER MERCHANT.

DARIEN, GA., *September* 16, 1884.

DEAR SIR: * * * Our bar at Doboy, before and a considerable time after 1860, admitted vessels of 22 feet draught, and this fact, well known abroad, gave to our port the reputation of being one amongst the best and safest ports on the southern coast. Vessels were in consequence easily and cheaply secured, thus giving an impetus to the timber industry, which quickly made Darien rank as one of the foremost timber exporting ports, in a position to compete with any other.

Gradually, however, the bar has so filled up that now vessels drawing 18 or 19 feet of water cannot be carried out without touching, unless the sea is perfectly calm. This has compelled the merchants here to load their large vessels at such points as Sapelo, Saint Simon's, and Brunswick, thus, in the first place, depriving our port of such pecuniary benefits as naturally would accrue to it from the presence of such vessels, besides putting merchants in a disadvantageous position to compete with other markets, on account of extra cost of drifting timber to such points, and other inconveniences and extra expenses attending such a course. If, therefore, this filling up process is allowed to go on undisturbed, it means certain death to Darien as a shipping port, and to ship profitably via Brunswick or Saint Simon's cannot be done on account of the extra cost consequent upon transporting timber such a distance.

In regard to the supply of timber along the river, I will say from personal knowledge that it is almost inexhaustible, and although there is not much in the immediate vicinity of the river, means of getting it down to the river-side can be arranged sufficiently cheap to prove profitable to the cutter if our port is again put on its former footing.

* * * * * * *

Yours, respectfully,

R. K. WALKER.

SPALDING KENAN, Esq.,
Mayor.

LETTER FROM HILTON TIMBER AND LUMBER COMPANY.

DARIEN, GA., *November* 18, 1886.

SIR: Understanding that a survey of Doboy Bar is contemplated for the purpose of determining whether improvements can be made and are required to facilitate the business of this port, we take the liberty of addressing you upon this subject.

We have no hesitancy in declaring that the deepening of Doboy Bar is much needed, and if a deeper depth of water can be had the business of the port will be enhanced.

We have known vessels drawing 21 and 22 feet of water to pass out over the bar with safety. During the past year we have had vessels loaded by us drawing 18 and 18½ feet of water detained, some of them two months, on account of low depth of water upon the bar.

This port does a considerable foreign trade, and the class of vessels engaged in this business are generally of deep draught, and we dare not charter vessels to load at this port drawing over 18 feet; hence when we take large orders requiring deep-draught vessels we are compelled to load them either at Sapelo Sound or at Saint Simon's. In loading vessels at these points we are compelled to tow the cargoes to these points, which involves an additional and greater expense, risk, and inconvenience. So far as this company is concerned, we feel very much interested in the improvement of the Doboy Bar, and trust the Government will see fit to do something in that direction.

With the bar improved we would feel in a condition to take orders which we would refuse now on account of the additional expense and great inconvenience which attend the shipments at the adjacent points, before mentioned; hence we feel satisfied an increased depth of water on our bar would materially increase the business done at this port.

Very respectfully,

HILTON TIMBER AND LUMBER COMPANY.
ROBERT P. PAUL,
Secretary and Treasurer.

Lieut. O. M. CARTER,
Corps of Engineers, U. S. A.

LETTER FROM ROBERT HUNTER AND COMPANY, TIMBER MERCHANTS.

DARIEN, GA., *November* 18, 1886.

DEAR SIR: By request we hereby submit our reasons for the decrease of the timber trade of this port.

During the season 1883–'84 we shipped about 12,000,000 superficial feet, season 1884–'85 between 9,000,000 and 10,000,000 superficial feet, and season 1885–'86 between 7,000,000 and 8,000,000 superficial feet. Out of these 8,000,000 feet about 3,000,000 were shipped via Saint Simon's, while in the previous years an occasional cargo only was shipped from there. The vessels loaded at Saint Simon's during 1885–'86 were sent there simply because there was not sufficient water on Doboy Bar to admit them. It is decidedly more expensive to load vessels at Saint Simon's, first on account of the transportation of timber to that place being almost doubly expensive, that is, on a vessel that carries 500,000 superficial feet the cost of drifting the timber to Saint Simon's would be $130, while to Doboy it would only cost $75. Then there are other costs which could be obviated were vessels at Doboy: for instance, the expense of going to Brunswick to clear such vessels, and the loss of time attending same. But the above are minor considerations. It is a fact that under ordinary circumstances timber can be drifted from Darien to Doboy in two tides. To Saint Simon's it takes at least three days. This loss of time is of course an important consideration when a question of demurrage arises. Again, the broad and straight stream to Doboy makes it possible to send timber there in almost any kind of weather, while a little spell of rough weather makes it positively unsafe to start a drift to Saint Simon's, on account of the many narrow and winding parts that have to be passed through in going there.

All these disadvantages certainly help to handicap shippers at this point, and it is obvious that in consequence not only no stimulus, but a decided check is given to the trade.

We do not forget to make due allowance for the general trade depression of the last two or three years when we assert that to the necessity of shipping timber and lumber via such far-off points as Sapelo and Saint Simon's may be attributed the glaring decrease of shipments from this port.

We are, dear sir, yours, faithfully,

ROBERT HUNTER & CO.
Per R. MUNSON, *Attorney.*

Lieut. O. M. CARTER.

COMMERCIAL STATISTICS OF THE PORT OF DARIEN, GEORGIA.

Exports of timber and lumber (pitch pine) as per tabulated report.

Total value foreign shipments from January 1, 1875, to January 1, 1886 (583,316,741 superficial feet)	$7,090,283.00
Total value coastwise shipments from January 1, 1875, to January 1, 1886 (178,729,300 superficial feet)	2,949,730.90

Rice.

Coastwise shipments:	
Total value from January 1, 1875, to January 1, 1886	$924,000.00
Average annual value	84,000.00

The figures given above are the result of careful investigation, and due consideration has been given to the partial failure of the crops of certain years and to the fluctuations of prices.

Naval stores.

Coastwise shipments from 1880 up to and including 1885	$305,000.00

In the year 1880 the value of naval stores shipments amounted to $12,000. The operations have gradually been extended until in 1885 the value of shipments, from reliable figures, amounted to $66,000. In 1886 it is estimated they will reach $85,000. Shipments are made in small sailing vessels and in steamers.

Cypress.

Prior to 1886 but little attention was given to this wood. Some enterprising Northern gentlemen (the Messrs. Van Gilder & Sons), discovering its abundance along the Altamaha, have now erected a mill at Darien expressly for the manufacture of cypress. This has given a decided stimulus to the industry and it bids fair to become flourishing ere long. Small parcels of this wood have been shipped for many years. The first complete cargo was shipped during 1886 and before the present year ends two more cargoes will be shipped.

Hardwoods.

Coastwise and foreign shipments from January 1, 1875, to January 1, 1886	$35,000.00

Considering the great quantities of the various kinds of hardwoods that may be found along the Altamaha, the trade in these woods has not been developed to the extent it deserves. Few entire cargoes have been shipped, but small parcels of oak, ash, hickory, etc., are frequently sent along with pine cargoes. The great obstacle in the way of extensive shipments of oak is the costly and annoying transportation to Darien, it being necessary to attach it to pine or lighter woods to prevent it from sinking. Those of our business men who have any experience in this line are of the opinion that in order to engage in the shipment of oak a liberal investment of capital for flats, tow-boats, etc., would be necessary, but the unsatisfactory state of affairs produced by the insufficiency of water on the bar does not tend to encourage any such investment.

Hides.

About 500 hides have been exported annually coastwise.

Total value shipments from January 1, 1875, to January 1, 1886	$11,000
Average annual value	1,000

Brick factory.

Messrs. Toad & Huntington, out of a clay brought from Sansavilla, about 25 miles from Darien, manufacture an excellent brick. The clay is brought from Sansavilla in flats, and the brick is manufactured here. So far the manufacture has been regulated by the local demand, but the gentlemen who have the enterprise in hand are now prepared to extend their operations. The quality of the clay has been pronounced superior by experts and the supply is practically inexhaustible. Little or nothing was done in this line prior to 1886.

Coastwise imports not entered in custom-house.

Total value from January 1, 1875, to January 1, 1886 ..... $3,965,000

Number of steamers (coastwise) touching at Darien, etc.;

During the years 1875, 1876, 1877, 1878, 1879, and 1880, the average annual value of coastwise imports amounted to $390,000.

The years 1881, 1882, 1883, 1884, and 1885 show an average annual value of $325,000.

During the first six years, the number of steamers trading between points up the river, Brunswick, Savannah, and Darien, touching at Darien on an average 240 times a year, with a gross average tonnage of 63,000 tons per annum. Now about 150 landings are made, and the average tonnage amounts to about 40,000 annually.

Farm products.

Annual average value of the farming industry is estimated at $7,000

All farm products are disposed of at home.

Value of the stevedore business.

1875	$92,787	1882	$97,828
1876	29,057	1883	102,826
1877	139,275	1884	116,170
1878	125,745	1885	92,189
1879	104,550		
1880	161,512	Total value for the eleven years	1,313,197
1881	151,258		

Value of the tonnage business.

1875	$19,875	1882	$24,548
1876	24,766	1883	22,987
1877	27,452	1884	22,151
1878	25,165	1885	18,439
1879	21,400		
1880	23,763	Total value for the eleven years	263,503
1881	32,957		

Value of the pilotage business.

Pilotage on foreign vessels for last eleven years amounted to	$109,509
Pilotage on coastwise vessels for last eleven years amounted to	82,250
Total	191,759

GENERAL REMARKS REGARDING THE COMMERCE OF THE PORT OF DARIEN, GEORGIA.

The timber trade.—So far as inclosed official figures of exports tell the tale, our timber trade is on the decrease. Actually it is not. As much timber as ever comes down to Darien from the interior, but the shallowness of water on our bar makes it necessary to ship a large part of our timber to Sapelo and Saint Simon's. While the cost of sending timber from Darien to Doboy is from 12½ to 15 cents per 1,000 feet, the cost of sending it to Sapelo and Saint Simon's is from 25 to 30 cents per thousand. It is easy to see that this disadvantage alone will do much to exclude us from competition with other pitch-pine ports who have no such disadvantages to contend with. Such shipments also being cleared through the custom-houses of Savannah and Brunswick, go to swell their exports, and Darien, in consequence, finds it a hard matter to secure anything like the recognition she deserves. The presence of such vessels in our own harbor would materially increase our general trade and add to the importance of the port. While so far all these disadvantages have not dealt any serious blow to the interior timber trade, they certainly have prevented its natural growth and with it the growth of our commerce generally.

For the last five years from fifteen to twenty-five vessels of a large class have annually loaded with Darien timber at Sapelo and Saint Simon's, but the quantities and values of these cargoes are recorded in the custom-houses of Savannah and Brunswick and claimed as amongst their exports.

The figures submitted in this report are strictly shipments from our own harbor.

Timber shipments from port of Darien, Ga., from January 1, 1875, *to January* 1, 1885.

Year.	Foreign.		Coastwise.		Total.	
	Superficial feet.	Value.	Superficial feet.	Value.	Superficial feet.	Value.
1875	41, 447, 024	$557, 524	10, 992, 600	$181, 377. 00	52, 439, 624	$738, 901. 00
1876	60, 762, 000	735, 090	8, 370, 000	138, 105. 00	69, 132, 000	873, 204. 00
1877	64, 378, 000	776, 856	11, 888, 100	196, 153. 65	76, 266, 100	973, 009. 65
1878	59, 697, 124	716, 365	7, 057, 800	116, 453. 70	66, 754, 924	832, 818. 10
1879	47, 217, 818	566, 613	12, 646, 800	208, 672. 20	59, 864, 618	775, 285. 20
1880	74, 612, 520	895, 350	15, 368, 500	253, 578. 60	89, 981, 020	1, 148, 928. 60
1881	65, 420, 876	785, 050	25, 642, 800	423, 106. 20	91, 063, 676	1, 208, 156. 20
1882	36, 639, 379	439, 672	30, 688, 200	506, 355. 30	67, 327, 579	946, 027. 30
1883	42, 385, 000	508, 620	22, 517, 100	371, 522. 15	64, 902, 100	880, 152. 15
1884	50, 656, 000	607, 872	18, 573, 300	306, 459. 45	69, 229, 300	914, 331. 45
1885	40, 101, 000	501, 262	14, 984, 100	247, 937. 65	55, 085, 100	749, 199. 65
Total	583, 316, 741	7, 090, 283	178, 729, 300	2, 949, 730. 90	762, 046, 041	10, 040, 013. 90

COMMERCE.

Year.	Value of exports.	Value of imports.	Total collections.
1880	$1, 621, 904	$5, 600	$11, 896. 72
1881	1, 137, 496	3, 356	18, 980. 62
1882	1, 073, 008	1, 025	11, 254. 19
1883	969, 834	2, 334	11, 067. 37
1884	1, 638, 185	11	9, 688. 29
1885	860, 500	.....	2, 350. 01

First Lieut. O. M. CARTER,
Corps of Engineers, U. S. A.

R. W. GRUBB,
Deputy Collector, port of Darien.

Arrival and clearances of vessels at Darien, Ga., from January 1, 1875, *to January* 1, 1886.

ARRIVED.

Year.	Coastwise.			Foreign ports.						Total.			Greatest draught.
				American vessels.			Foreign vessels.						
	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.	No.	Tons.	Crew.	Feet.
1875	77	28, 053	641	...	.....	.....	92	47, 600	1, 198	169	75, 663	18, 215	22
1876	65	23, 105	611	...	.....	.....	124	70, 368	1, 897	189	93, 473	2, 508	21
1877	104	24, 827	1, 257	3	674	22	99	50, 913	1, 231	206	106, 414	2, 510	20
1878	61	29, 264	641	2	1, 051	20	126	60, 109	1, 620	187	90, 424	2, 280	20
1879	58	23, 275	487	3	1, 199	25	115	57, 710	1, 407	176	82, 184	1, 919	19½
1880	66	21, 539	489	1	668	13	134	68, 072	1, 608	201	90, 279	2, 110	19½
1881	101	40, 619	849	3	1, 220	29	162	84, 456	1, 991	266	126, 295	2, 869	19½
1882	117	48, 208	999	1	453	9	90	51, 421	1, 155	208	100, 082	2, 163	19
1883	95	38, 173	815	...	.....	.....	93	49, 790	1, 135	188	87, 963	1, 950	19
1884	81	34, 412	714	2	606	16	92	50, 178	1, 133	175	85, 196	1, 863	19
1885	78	27, 763	682	2	652	16	80	42, 587	975	160	71, 002	1, 673	18½

CLEARED.

1875	22	12, 214	328	11	4, 055	97	104	55, 759	1, 372	137	72, 028	1, 797	22
1876	39	9, 300	270	4	1, 553	32	180	87, 489	2, 263	223	98, 342	2, 565	21
1877	44	13, 209	314	4	842	21	169	92, 795	2, 154	217	106, 846	2, 489	20
1878	28	7, 842	181	6	3, 009	62	149	83, 385	1, 947	183	94, 236	2, 190	20
1879	40	14, 052	301	7	2, 765	57	125	65, 433	1, 538	172	82, 250	1, 896	19½
1880	55	17, 076	393	7	3, 589	72	168	84, 172	2, 016	230	104, 837	2, 481	19½
1881	80	28, 492	617	8	3, 120	70	184	95, 353	2, 164	272	126, 965	2, 851	19½
1882	93	34, 096	709	6	1, 962	46	115	63, 525	1, 434	214	99, 585	2, 189	19
1883	66	25, 019	519	9	3, 533	72	108	56, 411	1, 340	183	84, 963	1, 931	19
1884	59	20, 637	457	11	3, 977	85	119	66, 337	1, 478	189	90, 951	2, 020	19
1885	46	16, 649	339	8	3, 354	62	98	52, 742	1, 198	152	72, 745	1, 599	18½

The foreign shipments of timber and lumber for 1885 were 40,101,000 feet, valued at $500,000.

To permanently improve Doboy Bar would require the construction of contracting works of great length and cost, and from all of the foregoing I am of the opinion that the present and prospective demands of commerce are not such as to warrant the expenditure of such a sum of money.

I think, however, that a small amount can be so expended in hydraulic excavating or propeller sluicing as to give a greatly increased depth of water on the bar and a reasonably permanent channel, and I am of the opinion that, to this extent, the channel from "Doboy Island to Doboy Bar" is worthy of improvement. No survey is needed.

The population of Darien is about 2,000, and of Doboy about 400.

Doboy is in the collection district of Brunswick. Darien is the nearest port of entry. Sapelo is the nearest light-house.

Very respectfully, your obedient servant,

O. M. CARTER,
First Lieutenant, Corps of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF FARM CREEK, ILLINOIS, WITH A VIEW TO CHANGING ITS COURSE.

UNITED STATES ENGINEER OFFICE,
Chicago, Ill., December 9, 1886.

GENERAL: To comply with the provisions of section 7, river and harbor act approved August 5, 1886, I have the honor to report the following facts and conclusions as the result of a preliminary examination made by me of "Farm Creek, Illinois, with a view to changing its course."

Farm Creek, I find, is an ordinary and rather insignificant township run, about 12 miles in length, located in Fond Du Lac and Washington townships, Tazewell County, Ill. It has the usual characteristics of such streams in this section, dry or nearly so during dry weather, in the rainy seasons overflowing its banks where it can, and bringing down from the bluffs considerable quantities of gravel and sand, which it spreads out over the bottom-lands. It empties into Peoria Lake near its lower end, opposite the city of Peoria. Its present low-water mouth is perhaps a mile above the lower end of the lake. The stream leaves the bluff about 1½ miles from the lake, and for this distance flows over the bottom-lands with no well-defined high-water channel. The evidences are that during its high-water stages the mouth may be anywhere within a reach of 2 miles along this portion of the Illinois River. As a result of this action the eastern side of the lower end of Peoria Lake seems to be gradually shoaling up, with a tendency to extend the river proper further north. A comparison of the maps in this office showing old soundings with those of recent date does not indicate that this process is working any detriment to the interests of navigation on the west side of the lake.

As there are no navigation interests to be subserved in this locality on the east side, the benefits to the general commerce of the country to be derived from changing the course of Farm Creek are not apparent. From the facts developed during this investigation I conclude that the proposed improvement is not necessary in the interests of commerce, and is not worthy to be undertaken by the General Government.

It might be proper to mention also in this connection that the portion of the Illinois River which it is assumed is to be benefited by the proposed improvement lies within the reach of that river that is con-

trolled by the State of Illinois through its board of canal commissioners. Tolls are collected on its commerce for the benefit of improvements owned by the State.

Very respectfully, your obedient servant,

THOS. H. HANBURY,
Major, Corps of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF POND RIVER, KENTUCKY.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 20, 1887.

GENERAL: In accordance with the instructions contained in Department letter of September 27, 1886, I have to submit the following report of the prelimary examination of Pond River, Kentucky.

Pond River, a tributary of Green River, is a narrow, crooked stream. It is principally used for floating logs to market. Its capacity is so small that it is hardly probable that any improvement would develop much commerce.

It is not, therefore, considered worthy of improvement.

Very respectfully, your obedient servant,

JAS. C. POST,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION FOR ICE-HARBOR AT PADUCAH, KENTUCKY.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 1887.

GENERAL: I have the honor to submit the following report of a preliminary examination "for an ice-harbor at Paducah, Kentucky," as ordered by the river and harbor act of August 5, 1886.

For the reasons stated by Lieut. Lansing H. Beach, Corps of Engineers, in his report hereto annexed, I have to state that the locality is not "worthy of improvement," in the sense that no work is required here at the expense of the United States.

Respectfully, your obedient servant,

WM. E. MERRILL,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF LIEUTENANT LANSING H. BEACH, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 1887.

SIR: I have the honor to submit the following report on the preliminary examination for an ice-harbor at Paducah, Ky.

The object of the citizens of Paducah in asking that an ice-harbor be made at that place was not that an appropriation should be made or works constructed for that purpose, but that the existing fine harbor of refuge should be recognized by the

Government, and the Government craft on the Mississippi ordered to winter there. The Tennessee River forms the best possible harbor for boats on the Ohio or Upper and Middle Mississippi rivers, and as there is no instance on record of a vessel's ever having been injured at that point by the ice, the citizens took steps, after the disaster to the Mississippi River Commission fleet in February, 1886, to have the advantages of that locality prominently presented, with the hopes of preventing the repetition of such an occurrence, and also of profiting incidentally from the presence of the vessels and their crews. No appropriation is asked and none is needed as the harbor is, as far as experience extends, already perfectly safe.

The locality is not "worthy of improvement."

Very respectfully,

LANSING H. BEACH,
First Lieutenant of Engineers.

Lieut. Col. W. E. MERRILL,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF THE BAR AT THE MOUTH OF LIMESTONE CREEK, IN THE HARBOR OF MAYSVILLE, KENTUCKY.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 1887.

GENERAL: I have the honor to submit the following report upon the preliminary examination of "the bar at the mouth of Limestone Creek, in the harbor of Maysville," which was ordered by the river and harbor act of August 5, 1886.

For the reasons given by Lieut. Lansing H. Beach, Corps of Engineers, in his report hereto annexed, I have to state that the locality is not "worthy of improvement" in the sense that no special appropriation is needed for work at this point. The bar in question is in the Ohio River, and in case of its interference with navigation it can be removed by the Ohio River dredges, as a part of their ordinary service, without the need of the special interposition of Congress.

Respectfully, your obedient servant,

WM. E. MERRILL,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF LIEUTENANT LANSING H. BEACH, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 1887.

SIR: I have the honor to submit the following report on the preliminary examination at mouth of Limestone Creek, Maysville, Ky.

Limestone Creek is merely a drainage channel for the hill-sides back of and in the immediate neighborhood of Maysville; its greatest length is about 4 miles, in which distance it falls nearly 400 feet. It has almost no water at all except just after a rain or when the snow is melting, but, as might be expected from the conditions, the velocity of its current is very high when the quantity of water in the stream is at all considerable. The people of Maysville claim that the creek is carrying such an amount of sediment into the river as not only to threaten the destruction of the harbor, but also to seriously interfere with the general navigation of the river, and ask that the mouth of the creek be so fixed as to prevent further transfer of material, and that relief be afforded from the present unfavorable conditions in the channel and at the landing. An examination of the river failed to disclose any obstructions at either place of sufficient magnitude to require any attention or action at present. A cloud-burst in rear of the city on July 31, 1882, caused a great flood in the creek and an immense wash of material into the river. This created something of a bar which had a tendency to throw the current across to the side of the convex bank

and to form a deposit in front of the city; but from all that could be learned, the channel is gradually resuming its former position and depth, nor has the creek thrown out any appreciable quantity of sediment since. Should the bar ever become troublesome, a few days' work of the dredges would be sufficient to counteract the evil.

The locality is not worthy of improvement.

Very respectfully,

LANSING H. BEACH,
First Lieutenant of Engineers.

Lieut. Col. W. E. MERRILL,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF BAYOU ROUGE, LOUISIANA.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 23, 1886.

GENERAL: I forward herewith a report of Lieut. O. T. Crosby, Corps of Engineers, on an examination of the Bayou Rouge, Louisiana, made recently, as required by act of Congress of August 5, 1886. For the reasons given by Lieutenant Crosby, in which I fully concur, this bayou is not worthy of improvement.

Very respectfully,

W. H. HEUER,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT O. T. CROSBY, CORPS OF ENGINEERS.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 22, 1886.

SIR: I have the honor to report as follows upon an examination of Bayou Rouge, Louisiana, recently made under orders from you. This preliminary examination was provided for by act of Congress approved August 5, 1886.

Bayou Rouge has its source in Lake of Pearls, a shallow body of water, about 6 square miles in area, lying south of Red River, and receiving its principal supply from bayous sent off from Red River. Its principal outlet is a small stream, about 2 miles long, which separates into two streams; one, the Bayou De Glaise, flowing directly to the southeast, and after a tortuous course reaching the Atchafalaya near the head of that river; the other, Bayou Rouge, flowing northwest, then southeast, until it, too, after a tortuous course, reaches the Atchafalaya about 30 miles below the mouth of the De Glaise.

Bayou Rouge is about 55 miles long. For present consideration it may be divided into four sections. The first section is 10 miles long, and extends from the point of separation of the two bayous (commonly known as the Junction) to a landing known as Enterprise. This point is reached by boats at every high water, the route being from the Atchafalaya along Bayou De Glaise. There is practically no water here during the fall and early winter season, so that at the time of my examination, November 19, there was not sufficient water to float a skiff, and the work of examination was done in buggy and on horseback. This state of affairs continues until the general rise of the Mississippi and Atchafalaya, the navigation season extending generally from February to May. There are in this section several sharp bends, but as the cross-section is quite flat the small boats plying on this stream are able at high stages to make the points without difficulty. Indeed, I could not learn from people living in the neighborhood of any serious complaint made by the steamboat owner during his season of activity. There are, here and there, willow trees which brush against the upper works, but being very pliable, I was told that they offer only an inconsiderable obstruction.

Since the bayou is unnavigable at low water the logs and stumps now and then seen on the bottom are not obstructions.

The second section extends from Enterprise Landing to Evergreen, and is 6 miles long. Evergreen is a small town having three or four stores and selling about

$145,000 worth of goods per annum. The distance by land from Evergreen to Enterprise is 2 miles, the bayou making long bends between the two places. The boating business of Evergreen is done at Enterprise Landing. While it is possible for the boats running on the bayou to go beyond Enterprise, they do not do so because of the sharp bends in the section considered, because there are trees obstructing the passage, and because there is little to be gained, the road to Evergreen being short and good. Indeed, it would be impossible to go beyond the edge of the village, as there is a fixed bridge over the bayou, recently erected. Moreover, the cross-section changes in character a short distance below Evergreen, the banks becoming very steep, the bayou very narrow, so that it would be extremely difficult for any but the smallest craft to make the bends. For these reasons there have been no boats at Evergreen since 1874, when, the whole country being flooded, one boat made its way to the village.

The third section extends from Evergreen to Big Cane, distant by road about 13 miles; by bayou about 15 miles. This section is considered by all as entirely unnavigable. Many persons with whom I conversed on the subject suppose that the clause requiring this examination could not have been intended by its framer to apply to any part of bayou Rouge below Evergreen. But, since no limitation was expressed, I report on the whole. The banks in this, the third section, are steep, the bayou very narrow, the bends very short, the trees growing between the banks very numerous.

At the time of the examination it could not be navigated in a pirogue. In the season of the flood it is filled with a rapidly flowing mass of water. In neither condition is it navigable.

The fourth section extends from Big Cane to the Atchafalaya. For many years previous to 1882 this section was rendered navigable during the greater portion of the year by a dike built across its mouth, separating it from the Atchafalaya, and as the waters fell in summer sufficient supply was retained to considerably prolong the season of navigation for the small boats usually plying in the trade; in times of flood the dike served as a protection to a considerable area of land. This dike was destroyed in 1882, since which time the navigable season has been on this section what it is on bayous Rouge and De Glaise, generally about three months per year. It is confidently stated by reliable parties at Big Cane that the State of Louisiana will certainly rebuild the dike. Since its destruction there has been practically no navigation, even at high water, on this fourth section. The Texas and Pacific Railroad began, in 1882, to take freight from bayou Rouge. There are two stations, each only 5 miles distant from Big Cane, and other stations equally near to points lower down the bayou. The railroad rates on cotton, $1.75 per bale, are the same as the boat rates when they handled freight across the dike. There are no obstructions preventing the easy ascent of boats, at high water to the point hitherto reached by them. Should the dike be rebuilt, low-water navigation may be resumed as it was before. The transportation facilities now offered by the railroad would probably discourage such an endeavor, especially when it is considered that the total amount of cotton to be handled in this vicinity, as reported to me by the principal planter and merchant at Big Cane, is about 3,500 bales.

The third section having long been recognized as unnavigable, a fixed bridge has been built across the bayou at Big Cane.

From the foregoing description of Bayou Rouge, it will be seen that the first section, 10 miles long, and the fourth section, 24 miles long, have good high-water navigation and no low-water navigation; that the second section, 6 miles long, could be given high-water navigation (cutting heavy trees and diminishing sharpness of bends), but that little would be gained thereby, while the cost would be considerable; that the third section is not susceptible of improvement within any reasonable financial limits.

If high water occurred early enough to move any thing but a small fraction of the crop, it might be well to remove the few obstructions, such as willow trees, in the first section; but since these are not seriously in the way, and since most of the crop has been moved by the time boats begin to run, no expenditure here could be recommended.

The matter of obtaining all-the-year navigation for bayous De Glaise and Rouge has frequently been discussed by those interested. This can be done only by a system of canalization; wholesale dredging to navigable depth below low water of the Atchafalaya being out of the question on account of cost.

The only reservoir from which water for canalization could be obtained is Lake of Pearls, above referred to. The idea heretofore entertained has been that of placing a lock at the mouth of bayou De Glaise, a dam at same point on the Rouge near Evergreen, and as many locks intermediate between these structures as would break up the stretch of about 60 miles into convenient pools; the canal thus formed to be filled by draining Lake of Pearls into it.

The efficacy of this plan depends upon two conditions—the sufficiency of supply from the lake and the sufficiency of its elevation over the bayou bottom in order to give navigable depth. To learn what I could without instruments concerning these

points I penetrated the cypress swamp surrounding the lake, and, by the aid of water-marks, found that the low-water surface of the lake is about 12 feet below the high water of 1882. At a point about 10 miles below Evergreen, 6 miles above the junction, the bed of the bayou was found, by aid of similar marks, to be about 12 feet below the same flood, showing that the lake level extended into bayou Rouge would give less than 6 miles of navigable water. This rough measurement, checked by data kindly furnished by the Louisiana State Engineer Office, I find to be correct to within an inconsiderable error.

Even if the whole distance from the Junction to Evergreen could be improved in the way considered, the cost of the work, compared with the business on Bayou Rouge alone, would be extravagant.

What the conclusion on this head might be were the interests of Bayou De Glaise also considered I do not know. It is certain that to improve even 3 or 4 miles of Bayou Rouge costly works must be built in the De Glaise, the commerce of which is far greater than that of the portion of Bayou Rouge to be benefited. But whether one or both bayous be considered, no costly work could be recommended until something is known concerning the treatment to be given the Atchafalaya and its connection with the Mississippi. No improvement would be of value unless it could give a cheap route to New Orleans, the general market.

The commerce on Bayou Rouge is almost wholly in cotton. Last year about 3,800 bales were raised between the Junction and a point below Evergreen, beyond which cotton usually goes to Big Cane or the railroad stations near it. All the cotton shipped from Evergreen and its vicinity goes to the railroad unless the water rises very early, in which case a part of the crop goes by the small boats running to Enterprise Landing from the Atchafalaya River. The sugar mills in the vicinity of Evergreen produce about 1,500 hogsheads of sugar and 2,000 barrels of molasses. As has been stated, about 3,500 bales of cotton are raised on the lower bayou. The average haul for the 3,800 bales raised on the upper bayou is about 9 miles to Irion, the railroad shipping station. The sugar mills are nearer the railroad; their average haul would be perhaps 4 miles. The average haul for cotton costs about 50 cents per bale; railroad charges, $1.75. The average haul on the lower bayou is less than on the upper. The only improvement that could be applied to this part is already contemplated by the State, on the ground, however, of protection from overflow, improvement of navigation being incidental and of small value. The lands along the bayou are now quite thickly settled. Prospective commerce can not be predicted as much larger or smaller than that now existing.

Since high-water navigation, where at all practicable, is now but little obstructed; since when it exists it can handle but a small part of the business; since low-water navigation can be obtained only at immense cost (extensive dredging, removal of thousands of trees, erection of locks and dams, etc.), Bayou Rouge is not, in my opinion, worthy of improvement in the sense in which I understand those words to have been used by Congress.

Very respectfully, your obedient servant,

O. T. CROSBY,
First Lieutenant of Engineers.

Maj. W. H. HEUER,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF DUGDEMONA RIVER, LOUISIANA.

This stream was examined by Assistant W. S. Davis in March, 1887. He reports that it is only a tortuous creek, flowing through an uninhabited swamp about 2 miles wide. The surrounding country is hilly and sparsely settled, and the soil is thin.

The stream is used to a limited extent in rafting stave timber into Little River and thence through the lower end of Catahoula Lake and Saline Bayou into Red River. To the northward the country around Winnfield is under cultivation and produces a certain amount of cotton, estimated at not over 2,000 bales. This is hauled to Ouachita River for shipping. Some years ago, it is said, a small steam-boat ascended the stream nearly as high as Winnfield, but could not find a place to turn around. She was compelled to back out, and barely escaped loss, the upper works being carried away by leaning timber during the passage down-stream.

Assistant Davis does not find any argument in favor of improving Dugdemona River, and I therefore conclude that it is not worthy of improvement, that the work is not a public necessity, and that no further examination or surveys are needed.

[Transmitted by Capt. J. H. Willard, Corps of Engineers, with his annual report for the fiscal year ending June 30, 1887.]

PRELIMINARY EXAMINATION OF MOUTH OF CALCASIEU RIVER AND CALCASIEU PASS, LOUISIANA.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., December 2, 1886.

GENERAL: The river and harbor act of August 5, 1886, required, among other things, that an examination be made of the "Calcasieu Pass, the two bars obstructing navigation thereof," and of "mouth of Calcasieu River, the bar obstructing its mouth." An appropriation made by Congress at its last session permitted funds heretofore unavailable, on account of the wording of the act, to be used for removing two of the bars herein mentioned. The third, or outside bar, that in the Gulf, has not heretofore been a serious obstruction to navigation, but the wording of the act requiring the examination to be made made it evident to me that Congress wanted an examination made of the outer bar.

Mr. Thomas L. Raymond, the assistant engineer connected with this office, was directed by me to make this examination, and his report is herewith. It will be seen from an examination of the tracing that the least depth of water at mean low-tide on this outer bar is 6½ feet, while the water on the two inner bars was only about 3½ feet in depth. A contract is now in force to obtain by dredging a channel over the two inner bars having a least depth of 6 feet. The depth of water on the outer bar is now as great as it has been for many years, but the depth is liable to vary in consequence of storms which cause a shifting of the channel. The depth of water in Calcasieu Lake, which is about 15 miles long, is 6 feet, and were deeper water produced on the outer bar the advantage to the commerce of the town of Lake Charles would be that vessels could load deeper in proportion to the increase of depth of water produced, and thus carry out very much larger cargoes of lumber than at present, thus enabling the lumber merchants of this locality to compete with those in other Gulf ports less favorably situated geographically, besides enabling vessels to find a safe harbor in the Calcasieu Pass when necessary. On account of the shallow depths in Calcasieu Lake, it is still probable that the increased quantity of lumber produced for export, in the event of an improved bar, would have to be lightered before transfer to the sea-going vessels. The estimated annual value of the output of lumber at Lake Charles is about $750,000. About one-half of this is transported by rail. Should deeper water be required on the outer bar the most certain as well as satisfactory way of obtaining it would be by means of two jetties extending from the shore seawards, as indicated by Assistant Engineer Raymond, each jetty to be about 1½ miles in length, the jetties to be of brush covered with stone, dredging to be used as an auxiliary aid in producing depth. The estimated cost of the improvement to obtain a 12-foot depth is in round numbers $600,000. I believe from the facts stated that the harbor is worthy of improvement to the

Cornay River is not navigable except during high water, or about five months in the year. It is practically dry in low water, and about 30 feet deep in extreme floods.

The principal obstructions are cypress stumps and leaning timber. It would cost at least $8,000 to clean the river from its junction with D'Arbonne to Shiloh Landing, say 16 miles, and the benefit would consist only in reducing the haul from Shiloh to the river from 8 to 4 miles. It is reported that 850 bales of cotton were shipped from Shiloh last year, and about 4,000 bales from Stein's Bluff.

Work was done during the autumn and winter on D'Arbonne, and if continued may give sufficient relief to the country about Shiloh. I do not think Cornay River worthy of improvement at the present time, or that the work is a public necessity.

No further surveys or examinations are considered necessary.

[Transmitted by Capt. J. H. Willard, Corps of Engineers, with his annual report for the fiscal year ending June 30, 1887.]

PRELIMINARY EXAMINATION OF OUACHITA RIVER FROM CAMDEN TO MOUTH, WITH A SLACKWATER NAVIGATION.

A survey of Ouachita River from Arkadelphia to the mouth was made by Lieutenant-Colonel Raynolds in 1871. In 1874 Major Benyuard made a resurvey from Camden to the mouth of the river, and submitted estimates for dams with locks of stone or timber, the cost rising from about $3,000,000 to $6,000,000. Major Miller made further examinations in 1882 and 1883. (Reports of Chief of Engineers, 1871, page 340; 1874, Part I, page 352; and 1884, page 1386.)

Major Benyward's project was abandoned shortly after its approval, as the cost was considered too great in proportion to the amount of commerce to be benefited. Some $20,000 had been expended for timber for beginning the foundation of three locks, which had to be sold at public auction in accordance with existing law. The net proceeds, somewhat less than $900, were turned into the Treasury.

Since the plan was abandoned the Missouri Pacific and Cotton Belt routes have been completed southward, joining at Texarkana, and lines have been pushed westward from the Mississippi River from Arkansas City and from Natchez, the former nearly to Camden and the latter to Black River. The line from Vicksburgh to Shreveport, crossing Ouachita at Monroe, has been greatly improved; and a line has been projected to run parallel to Ouachita River and to tap cross-lines as far south as Alexandria, La. Two other lines have been located by different parties. One to touch the bends and lakes west of the Mississippi, and the other to follow in general the higher grounds known as the Macon Hills.

It is very difficult to make estimates of the amount of commerce on the river, but from such information as I have been able to obtain it does not appear to be increasing, and will propably remain at a stand until the dangers from overflow have passed. Allowing fair market rates for the cotton estimated to have been carried down Ouachita River during the fiscal year, the down freights amount to about $4,000,000 in value and the return to about $3,500,000.

Major Benyuard considered the bar at the mouth of Red River the key to this project, and the objections that he offered in 1874 have equal force at the present time. Three feet can not be carried over that bar

at low water without dredging and scraping. Indeed, it is not to be doubted that Red River would divorce itself from the Mississippi in a very short time if work on the bar were abandoned.

I made an examination of the river from Monroe to Camden in March, river at about 20 feet on the gauge. I saw two small steamboats and one larger one during the trip, which occupied about five days. Most of the river commerce is carried on by boats from New Orleans which draw from 2 to 4 feet light and from 5 to 8 feet when heavily loaded.

Taking into consideration the time of year when business is remunerative and the stage of water favorable, I think the present system of removing snags, leaning timber, etc., by the aid of plant belonging to the United States all that should be attempted. With sufficient money in one appropriation to give a good season's work to the snagboat *Wagner*, and to provide for a crane and quarterboat for a river and chopping party to work between medium stages and extreme low water over the whole river, as recommended in my report on Ouachita River for 1887, the stream could be put in excellent condition.

Brush or timber wing-dams could be built at the shoals, especially below Monroe, with but little expense, the material removed from the adjacent banks being used for the purpose. No special estimate is made for this stretch of river, the amount required being included in my general estimate for Ouachita River for 1888–'89.

In my judgment Ouachita River is not worthy of improvement by locks and dams, and the work is not a public necessity. No further examinations or surveys are considered necessary.

[Transmitted by Capt. J. H. Willard, Corps of Engineers, with his annual report for the fiscal year ending June 30, 1887.]

PRELIMINARY EXAMINATION OF BAYOU VERMILLION, LOUISIANA, TO SECURE NAVIGATION FROM ABBEVILLE TO THE RAILROAD BRIDGE OF THE LOUISIANA AND TEXAS RAILROAD.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 17, 1886.

GENERAL: I forward herewith a detailed report by Lieut. O. T. Crosby, United States Engineers, of his examination of the Bayou Vermillion, Louisiana, from Abbeville, La., to the crossing of the Louisiana and Texas Railroad bridge, made in accordance with act of Congress approved August 5, 1886. To improve the stream for navigation between the points named is estimated to cost $5,000. Between the points examined is a wooden wagon-bridge without a draw, through which steamboats cannot pass. Were the other obstacles to navigation removed, this bridge would still be an obstacle to navigation; and were this removed, or provided with a draw, the stream would then simply permit water transportation to the railroad bridge, where there is no depot, and which is about 1½ miles from the nearest freight depot, instead of by wagon haul of about 6 miles as now. The improvement if made would be purely local and not permanent. For the reasons expressed in Lieutenant Crosby's report, and considering the present demands of commerce, this bayou is, in my opinion, not worthy of improvement.

Very respectfully,

W. H. HEUER,
Major of Engineers.

The CHIEF OF ENGINEERS, *U. S. A.*

REPORT OF LIEUTENANT OSCAR T. CROSBY, CORPS OF ENGINEERS.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 15, 188

SIR: I have the honor to submit the following report on a preliminary examination of "Bayou Vermillion to secure navigation from Abbeville to the Louisiana and Texas Railroad bridge, Louisiana," recently made under your orders. Almost the whole of the portion of Bayou Vermillion to be considered, namely, 22 miles from the railroad bridge down towards Abbeville, was improved in 1881. In 1882 the remaining distance, about 3 miles, together with all that part south of Abbeville, was improved and a dam shutting off a cove near the mouth of the bayou was built with the hope of deepening the water over the bar in Vermillion Bay. The work was done by contract, and, so far as I can learn, not well done. The present condition of this stream will be better understood by considering it in three sections. Starting from Abbeville, the first of these extends about 15 miles up-stream. This portion is now navigable for steamers of considerable size. The *Barmore*, about 140 feet long by 30 feet beam, drawing about 3 feet, makes regular weekly trips from Morgan City to the upper end of the section considered. She runs under contract with the Southern Pacific Railroad, her charges being fixed at 70 cents per barrel, $1.65 per bale of cotton, $3.30 per hogshead of sugar. Her trip under the contract can not extend up nearer than 6 miles to the depot at Lafayette. This depot is about 1½ miles from the crossing of the bayou and railroad. At Morgan City the *Barmore* delivers freight to the railroad, reserving a fixed portion of the whole freight. The business is scarcely sufficient to pay for running the boat, and her captain is now trying to obtain new and higher figures in his contract with the railroad. The larger part of her business is found below Abbeville. She runs with little difficulty to the point indicated, say 15 miles above Abbeville, that is, with little difficulty so far as the river proper is concerned. The bar at its mouth offers a serious obstruction. While examining the bayou in a skiff, the water being at a low stage, I counted in the stream but twenty-five obstructions—snags and logs; overhanging the stream about thirty trees, whose removal would be beneficial. None of these obstructions are serious. The section extends from the upper limit of the first to Pinhook bridge, about 2 miles by bayou from the railroad bridge and about 2 miles by dirt road to the Lafayette depot. Ascending this section, obstructions were found to be more and more numerous, until at a point about 3 miles below Pinhook bridge the skiff could go no further, being stopped by great trees lying across the bayou from bank to bank. Up to this point I counted about eighty obstructions in the bed and the same number of overhanging trees. Many of these are serious obstructions whose removal would be necessary in order that the stream might be navigable. At two points the skiff had to be poled over short bars, and in the last quarter of a mile it was passed over trees lying in the bed only with great difficulty. This section from the 15th to the 23d mile, counting upward, is now navigated for 2 or 3 miles by the *Josephine Spengler*, about 100 feet long, by 25 feet beam, running in connection with the *Barmore*, while the business of the harvesting season justifies it. Above the limit of her trip, a very small tugboat, drawing barges, runs at irregular intervals. Three or four years ago a steamboat of nearly the same dimensions as the *Spengler* ran over the whole of this section, delivering goods at Pinhook bridge, then running out of the Vermillion along the Gulf coast to the Atchafalaya, thence to the head of the Atchafalaya, then down the Mississippi to New Orleans.

This trip, something like 550 miles in length, was made in opposition to the railroad, the distance from La Fayette to New Orleans being 144 miles. The steamboat, working at such disadvantage, could not maintain its cause. Since it stopped running the section considered has become obstructed until even a skiff cannot pass. Even were the obstructions removed, the width and depth are such that only small boats could pass at low water. As it was impossible, for reasons stated, to make a close count of the obstructions in the last 3 miles of this section, I estimate them on the basis of the number passed in the last quarter of a mile, when the skiff was hanging on some obstructions every minute or two. The numbers for the whole section obtained in this way are in the stream 350; overhanging, 250. The shoals that were met seemed to be caused by the logs lying in the bed, and would doubtless deepen were these logs removed. Mr. Wise, who ran the opposition boat referred to, is confident that the logs caused the small bars. In any case they were not serious obstructions, as they were very short, and of soft material, such that a small boat fitted for this part of the bayou could force a passage over them. It is also to be remarked that the water was unusually low at the time of my examination, thus causing the bars to appear at their worst. The third section, from Pinhook Bridge to the railroad bridge, is in about the same or even worse condition than the worst part of the second section. The number of obstructions in the channel I would estimate at about 250; overhanging trees, 175. Before the construction of the railroad this section was navigated by small boats, the Pinhook Bridge then having a draw; it is

now a fixed bridge, and for many years has been the upper terminus of the most venturesome navigation on the Vermillion. A few years ago the railroad company, at the request of the people of this vicinity, built a depot at the railroad bridge across the Vermillion. It was hoped at the time that the bayou would be sufficiently cleared of obstructions and Pinhook Bridge so arranged with a draw as to permit boats to reach the railroad and deliver their freight directly, thus avoiding the 2-mile haul to La Fayette. Neither of these hopes was realized; the depot was not used, and navigation even up to Pinhook Bridge ceased. I have seen Mr. Hutchinson, general manager of the railroad, to learn whether or not the depot would be re-established should the bayou be opened up to the railroad bridge. On this point he will say no more than that if business justifies such expenditure, the company will establish the depot. As the water route, even for points 20 miles distant from La Fayette, is in no sense a competitor with the railroad, it is evident that the value of any improvement of this section between Pinhook and the railroad bridge depends wholly on the existence of a depot at the latter bridge. The movement of freight would be *toward a depot;* if the depot at La Fayette were the only one to be reached, boats would stop at Pinhook Bridge and deliver to wagons which would haul to that depot, 2 miles or more distant, along the established roads; they would not go to the railroad bridge, which is not connected with the depot by a good road. Recapitulating, it appears that to clear the bayou up to Pinhook Bridge will require the removal of about 400 obstructions from the channel and about 300 overhanging trees. Their removal would cost, judging from cost of similar work in other streams, and allowing for contingencies, about $3,700. To extend the improvement to the railroad bridge would increase the cost to about $5,000. The result would be obtainment of a channel for boats drawing 3 feet and of about 20 feet beam. This channel would be maintained during almost, if not quite the whole year, until the falling in of other trees would again obstruct it. The advantage to commerce thus gained would be as follows:

The handling of about 3,800 bales of cotton would be facilitated, as it could then be taken by water to within 2 miles of a railroad depot, should no other be built, or directly to one should the railroad company build at the railroad bridge. There is now much difficulty in hauling this cotton to La Fayette or to one of the landings on the bayou in the direction of Abbeville, as the country roads are in a miserable condition. The average haul for this cotton would be diminished from about 6 miles at present to about 2 miles without, or about half a mile with, a depot at the railroad bridge. The shipment of light freights, now worth about $40,000 annually, and the transportation of passengers from Abbeville, would be facilitated; thus eggs and poultry, of which considerable quantities (about 5,000 dozen of eggs per month) are sent from Abbeville, would have a much quicker trip to New Orleans than now by the weekly boat to Morgan City. It is not expected that there will be any reduction in freights. Leading citizens of Abbeville informed me that they understood that rates must be fixed by the railroad, which either at La Fayette or Morgan City must handle all their produce, but they are extremely anxious to have quicker transportation for men and light freights, to be secured by the establishment, in case of improvement, of a daily line of small boats between Abbeville and one of the two bridges, Pinhook or the railroad bridge. This saving of time would be an encouragement to those desiring to extend their business as well as an indirect saving of money on the business now transacted. Heavy freights might or might not go up the stream to La Fayette, as in any case the rates would be about the same, and time of less consideration. At present the rates by boat are about 10 per cent. greater than on freight delivered by the shipper at La Fayette; thus cotton is $1.65 via boat and Morgan City and $1.50 from La Fayette. Since the railroad company thus controls the situation they might virtually prohibit the use of the improved water-way. It would probably be to their interest to prevent freight from going to Morgan City, thus giving them the short haul, and would encourage it in coming toward La Fayette. The large boat, the *Barmore*, would probably be prevented from coming even as high as she does now, and the railroad company would establish barge lines such as it has on the Bayou La Fourche and other streams, serving as feeders for its business at La Fayette or at the new depot which it might establish at the railroad bridge. Besides shortening the dirt-road haul of the 3,800 bales of cotton and giving expedition to movement of passengers and light freights, the principal benefit to be derived from the proposed improvement is in affording a good mail route to Abbeville. This town now receives its mail by a stage route, about 28 miles long, from New Iberia, a railroad town, 125 miles from New Orleans. In the rainy season this route becomes almost impassable; mails are delayed a week at a time. Were the bayou improved, a daily mail might be established which would regularly supply six or seven thousand people with mail. Only a small portion of these 7,000 are in the town of Abbeville itself, but that number would probably be supplied from various post-offices that might be established along the bayou.

Summing up the commercial advantages, it appears that the only reduction in freight rates to be looked for is that due to saving 5 miles of dirt-road hauling on 3,800 bales of cotton. This may be said to be worth about $400, or nearly at the rate of 10 cents per mile per bale. The expedition afforded passenger and light freight traffic is, of course, of value, but it is a value impossible to put into figures; and so of increased mail facilities, no one can doubt the great value to any community of rapid mails, but it is not reducible to exact figures.

Streams throughout the country are divided, by the policy of Congress, into two classes: those of a certain national importance, worthy of national money; those not of national importance, however important locally, and not worthy of receiving national aid. The line of distinction is difficult to draw, and the change from one class to the other a gradual, not a sudden, one. In the case under consideration all the facts relating to freight transportation show that while the improvement would be beneficial, the benefits are such as are usually considered purely local, and on account of the situation of the stream with reference to the general market, New Orleans, even the use of these advantages by the people are such as the Southern Pacific Railroad may completely control. On the other hand, the fact that the postal business of the country adjacent to the stream may be much facilitated by its improvement gives to it something of a national character, since the postal business is distinctly and exclusively under control of the General Government.

As a general commercial route, Bayou Vermillion, from Abbeville to the railroad bridge, is not of national importance, or worthy of improvement in the sense in which I understand those words to have been used in legislation on the subject.

As a mail route, it is worthy of improvement. This, however, may be a matter for the Post-Office, instead of the War, Department to consider.

Prospective commerce cannot, with any certainty, be predicted as greater or less than present commerce. There is plenty of fertile land, free from overflow, bordering Bayou Vermillion. A larger population could be supported where now it is but scant. Whether such increase will occur soon or not it is impossible to say. The improvement proposed would have, probably, some encouraging influence in this direction.

Very respectfully, your obedient servant,

O. T. CROSBY,
First Lieutenant of Engineers.

Maj. W. H. HEUER,
Corps of Engineers, U. S. A.

LETTER OF MR. W. B. BAILY, EDITOR OF THE LA FAYETTE ADVERTISER.

OFFICE OF THE LA FAYETTE ADVERTISER,
La Fayette, La., November 17, 1886.

DEAR SIR: In accordance with promise I will attempt to give you some information concerning the Bayou Vermillion.

Some work on Bayou Vermillion is, without doubt, a great necessity for the people of the parishes of La Fayette and Vermillion, for several reasons:

The people of Vermillion Parish and along the bayou have no other outlet to a market but that stream, which at one time saw four or five steamboats at its upper landing in regular trade. The trade is considerable; right on its banks you can count four sugar houses and six or seven cotton gins, with several more some distance within a few miles of the banks, from the line of Vermillion Parish to Pinhook, 2 miles below this town.

The country is all filled up and settled by small farmers who are self-sustaining and out of debt. As it is, the bayou being closed up at several places, these people have to haul their produce and freight from 2 to 15 miles to the Morgan Railroad, who, having no competition, extort exorbitant rates, to this extent, that whilst they only charge 40 cents per barrel for freight from New Orleans to Washington, La., they would charge these people 80 cents for carrying the same barrel 25 miles less.

It would also afford the Abbeville people an easier way of transportation to Morgan Railroad than by land.

There is another reason that should induce the Federal Government to do this work: Our bayou connects with the Teche and Fusilier, and a very safe and regular inland navigation can be inaugurated for our people in that direction instead of the dangerous mode by the Gulf; and as a military precaution in case of war with a foreign nation, with a few improvements made in these streams, would be very necessary.

Opening this bayou, navigation again would give us some competition against the Mogan Railroad, and thus relieve our people to some extent from the exorbitant rates we have to pay to that monopoly in freights.

If opened through the Teche might give an opportunity to connect with the Texas and Pacific Railroad, and bring about a lively competition between that line of road and the Morgan Railroad for our freights, at the same time open a way to the inhabitants of the different bayous on the new line of communication.

The people of the parishes of La Fayette and Vermillion have been for many years looking for relief in that matter, but what little was done was not effective and did not amount to anything in the way of opening the stream for steamboats, and that relief is truly and very much needed by our people.

I merely make mention of stream above this place to call your attention to same, if any steps should be taken in that direction in future.

Hoping to have the pleasure of meeting you again at no very distant day, I remain,

Your obedient servant,

W. B. BAILY.

Lieut. O. T. CROSBY.

PRELIMINARY EXAMINATION OF CYPRESS BAYOU, LOUISIANA.

The only Cypress Bayou that I have been able to find in this district lies in Texas, and forms, with Fairy and the Soda lakes, the high-water route to Shreveport. According to the early surveys, "the old channel of Cypress Bayou may yet be traced at low water" through these lakes, "and this, if cleared of logs and stumps, would afford low-water navigation of about 2 feet." Reports of the surveys and the final project for high-water navigation will be found in Reports of Chief of Engineers for 1873, page 669, and 1874, Part I, page 706. The estimates called for $372,580 in a single appropriation, in addition to the amount then on hand or that might be required afterwards for removing obstructions from the bayou. This project was disapproved on account of its great cost. In the mean time work was carried on by dredging and removal of logs, stumps, leaning timber, etc., so that by 1880 there was a well-defined channel marked with sign boards from Jefferson to Shreveport, a distance of about 65 miles.

A re-examination of this route was made in 1884, the report of which, with a map, will be found in House Ex. Doc. No. 103, Forty-eighth Congress, second session, and without the map on page 1552, Report of Chief of Engineers 1885.

The sum of $94,000 had been expended on this work to June 30, 1886, and the act of August 5, 1886, appropriated $18,000 more "to complete improvement." With this amount the old dredge *Lone Star* has been rebuilt and the work begun. The amount remaining on hand July 1, 1887, will allow about fifteen months' work to be done.

A reconnaissance was made in September, 1886, by the superintendent formerly in charge of the work, and subsequently I visited portions of the route. No further surveys or examinations are considered necessary. For details, suggestions, and money statement, attention is invited to my report on improvement of Cypress Bayou, Texas and Louisiana, for the fiscal year ending June 30, 1886.

[Transmitted by Capt. J. H. Willard, Corps of Engineers, with his annual report for the fiscal year ending June 30, 1887.]

PRELIMINARY EXAMINATION OF BAYOU TERREBONNE, LOUISIANA, FROM HOUMA TO THIBODEAUX.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 9, 1886.

GENERAL: I forward herewith a report of First Lieut. Oscar T. Crosby, Corps of Engineers, being a result of an examination of the Bayou Terrebonne between Houma and Thibodeaux, La., as called for by the river and harbor act *of August 5, 1886.*

Lieutenant Crosby's report shows that the greater portion of the bayou above Houma is a bayou only in name, parts of it being dry and other parts being only a drainage ditch. Under these circumstances the part examined is certainly not a navigable stream. It can only be made navigable by making a canal in what was once the bed of the bayou, now practically dry.

I concur fully with Lieutenant Crosby, for reasons which he gives, that the bayou between Houma and Thibodeaux is not worthy of public improvement.

Very respectfully,

W. H. HEUER,
Major of Engineers

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT O. T. CROSBY, CORPS OF ENGINEERS.

OFFICE UNITED STATES ENGINEER,
New Orleans, La., November 8, 1886.

SIR: I have the honor to report as follows upon a preliminary examination of Bayou Terrebonne, from Houma to Thibodeaux, La., recently made by me under your orders:

The distance from Houma to Thibodeaux is about 16 miles. Thibodeaux is the point at wich Bayou Terrebonne, in years past, drew its water supply from Bayou La Fourche, and thus indirectly from the Mississippi. This connection has long since ceased to exist.

Houma is situated at the head of navigation on Bayou Terrebonne, which continues its course to the Gulf, connecting latterly with other streams and lakes, by partly artificial, partly natural, water-ways until the Mississippi is reached opposite New Orleans. The boats running on this lower part of Bayou Terrebonne are small and are at times, as this season, prevented from running during several weeks by lack of water. These difficulties of navigation are being overcome by dredging, the work under the last Congressional appropriation having reached a point about 10 miles below Houma, with money enough still available to continue dredging a channel 35 feet wide by 5 feet deep (below Gulf level) to within 3 or 4 miles of Houma—perhaps closer. It is hoped that completion of the improvement to Houma, by affording uninterrupted navigation, may result in a reduction of rates through competition between water and rail.

At Houma the stream is now about 2.5 feet deep and perhaps 40 feet wide, though the cross section being very flat, much the greater part of this width is covered by water only a few inches deep. The fact that a towboat of about 14 feet beam and 18 inches draught cannot run, sufficiently shows the condition of the stream. The bed of the stream is overgrown with marsh and water-grasses.

For a distance of 3 miles above Houma there is practically no change; the width varies somewhat, the depth correspondingly, the cross section remaining about the same. At this point, 3 miles above Houma, the Terrebonne is fed by Bayou Cane, a short stream about 15 feet wide, and 500 or 600 yards long, leading out from a great swamp reservoir. It is called, sometimes a lake, sometimes a prairie or floating prairie. It is a basin receiving the drainage from the country between Bayous Black and Terrebonne. It is at times covered by a heavy growth of water-grass; hence the name of floating prairie. There is at all seasons, even now after a long drought, some outflow; it is this outflow that supplies the small volume now flowing through Bayou Terre Bonne.

Beyond Bayou Cane, the Terrebonne is practically dry. Since its bottom lies several feet below the roads along its bank, there is, of course, a little seepage water here and there, sometimes in holes 2 or 3 feet deep. A few miles above the Cane the course of the bayou is traced by the shallow depression of its former bed and the line of rushes which conceals whatever water may lie under them. In many places the bed is perfectly dry. As Thibodeaux is approached, the bed is found to be continually dry, so that even the rushes cannot grow. Here ditches have been dug in the former bed to assist in draining the road, and finally the "bayou" becomes simply a part of the system of drainage ditches of the town of Thibodeaux. It will be seen from this description, which is that of its ordinary state, that the term *Bayou* Terrebonne is traditional rather than veritable. During seasons of heavy rain there is, of course, some water in the old bed, but no boat can go further up than Bayou Cane. The owner of the *Harry*, one of the two towboats now tied up at Houma, informed me that he sometimes

ascended to the Cane in order to open the water-grass, thus permitting a freer flow of the prairie water into the Terrebonne. He said that to go beyond that point would require not the improvement of an existing water-way, but the construction of a canal. Such, indeed, is the fact. That such a work would be of some benefit cannot be doubted, as water routes throughout an agricultural country are always desirable; that its construction, considered from the engineer's point of view, is feasible, even easy, can not be doubted; but it is equally evident that the work cannot be recommended as the improvement of a water-way. To create one, taking advantage of the depression in the general surface, caused by previous flow of a considerable body of water through what was an outlet of the Mississippi, would involve the cutting of a channel to be filled by tide-water, aided somewhat by drainage from a small area. Such a cut would involve the removal of about 850,000 cubic yards of earth, the depth being 5 feet, the width 30 feet. The dredge below Houma is removing earth at a cost of about 4 cents per cubic yard, counting running expenses alone. It would probably be safer to estimate 10 cents as the cost, including plant, superstructure, etc., or about $85,000 for a tidal canal to Thibodeaux.

As the road which follows the bayou bed is at many points quite near the line that would mark one side of the cut, there might arise embarrassing, perhaps costly, considerations as to injury done this road. Of this, however, nothing certain can be said. At Terrebonne, or as it is now called, Schriever's Station, it would be necessary to have a draw-bridge constructed in the line of the Southern Pacific Railroad. As the stream was not navigable when this road was constructed, it is probable that the owners could demand compensation. On account of these and other contingencies, impossible to foresee, it would be prudent to place the final cost at not less than $100,000.

The strip of cultivable land between the bayou and the swamp lying on either side will average not more than half a mile in width, or a total of 16 square miles. About half of this is now under cultivation, while the other half has been abandoned. Some small corn and rice farms are beginning to appear on the abandoned sugar plantations. A branch road leaves the main line of the Southern Pacific at Schriever's Station for Houma to the south, and another for Thibodeaux to the north, both branches lying not far from the proposed cut. Supposing the work completed to Thibodeaux, together with the work now progressing toward Houma on the lower bayou, the resulting benefits would be better drainage for the lands lying along the new water-way; navigation for small boats from Thibodeaux to the Gulf. This route could scarcely be followed outside, as the small boats fitted for the canal would not be fitted for the Gulf voyage to the mouth of the Mississippi. They would go either to Thibodeaux, delivering there across the Bayou Lafourche levee to boats running to New Orleans or to the railroad; or they would go south, then east by the small canals, bayous, and lakes constituting the present Lugger Route. In either case active competition with the railroad would be difficult, perhaps impossible. The canal would probably serve as an excellent local highway, and would be much appreciated for its aid as a drainage stream. Perhaps it was necessary that this report should go no further than to show that the proposed work could not properly be recommended as the improvement of an existing water-way, but knowing as I well do the great importance of improved transportation routes to the rich agricultural country through which the examination took me, I have gone further to show what would result from constructing a water-way along the line considered. Viewing it in this light, I can not refrain from drawing attention to the fact that in this case, as in others in the same section, recommendations would almost entirely be reversed could the works be considered, not separately and as unconnected, but as parts of a system of short-line water communication through southern Louisiana to New Orleans. Considered separately, improvements such as that under discussion appear as local highways, lessening the use of wagon transportation to railroad stations; considered as parts of a whole they appear as water routes permitting actual competition for products of great value with the railroad, which now practically controls the business of this rich section. Thus the value of any improvement in the Terrebonne section is immensely increased; its character becomes much more national if it be connected with Bayou Lafourche and at the same time it be known that that important stream is to receive some definite treatment.

In conclusion, the work is not, in my opinion, a public necessity, its local character appearing plainly from what precedes; and "Bayou Terrebonne from Houma to Thibodeaux" is not worthy of improvement, in the sense in which those words have been used in river and harbor acts.

Very respectfully, your obedient servant,

O. T. CROSBY,
First Lieutenant of Engineers.

Maj. W. H. HEUER,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF BIG RAPIDS OF ST. JOHN'S RIVER, MAINE.

UNITED STATES ENGINEER OFFICE,
Portland, Me., November 16, 1886.

GENERAL: I have to submit the following report upon a preliminary examination of the Big Rapids of the St. John's River, Maine, made in compliance with the act of Congress approved August 5, 1886.

This duty was assigned to me in letter from office of Chief of Engineers, dated September 27, 1886.

In the latter part of October I visited the rapids and made as careful an examination of the situation as the means at hand would permit.

No very accurate maps of the river were available, so that the distances given are only such as could be obtained from inquiry, verified as far as possible by observation.

The head of the rapids is given as 33½ miles above the mouth of the Fish River, where the little village of Fort Kent is situated. The only roads which have been made passable for wagons do not extend more than 20 miles above Fort Kent, though at the time of my visit the Road Commissioners of the county were engaged in laying out an extension along the St. John's River as far as the mouth of the Alleguash River, several miles below the foot of the rapids.

The actual settlers in this part of the State are comparatively few, and it has only been within a year that the township at the mouth of the Alleguash River has been organized as a plantation.

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Nearly all the lands in this portion of the State are owned by people who do not reside upon nor near them.

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Above the mouth of the St. Francis River the few settlers maintain communications almost entirely by canoes.

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At the time of my visit the water was at its extreme low stage, and, although a few deep places were found, the stream would hardly average 2 feet in depth.

The river above Fort Kent has a declivity too great for steamboat navigation unless improvements were made the cost of which would far outweigh any probable benefits.

The Big Rapids are approximately 2 miles in length, and the water in its low stage would perhaps average 200 feet in width. At high stages the width given would probably be doubled.

From some very crude observations which I was able to make, * * * I estimated the surface declivity of the water at the rapids to be 64 feet.

The channel is confined by banks underlain by ledges, though the ledge did not appear to form any obstruction, save in a single place of small extent. Bowlders, however, are very numerous, fairly filling the bed of the river, and varying in size from that of paving stones to others which would contain several cubic yards.

The numerous other rapids below are quite similar, though of less extent.

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At Grand Falls, New Brunswick, about 20 miles below Fort Kent, the water of the river, after a very great fall, dashes in foam through a narrow gorge like a cañon in the solid ledge.

Above Edmunston, New Brunswick, which is the terminus of a branch of the New Brunswick Railroad, there is some small navigation in flat-boats. These boats vary in length from about 60 to about 80 feet, and from 8 to 11 feet in width, and they carry from 5 to 10 tons each; they are towed up the river by horses, using the rugged and rocky shores as towpaths.

So far as I could ascertain, the entire number of these boats on the part of the river here mentioned does not exceed 20, and the average value is probably less than $250 each, making the total invested in flat-boats not exceeding $5,000.

Only a part of these boats go above the Big Rapids of the St. John's, as they are employed on the Alleguash and elsewhere. Exact statistics could not be obtained, but if my information be approximately correct, it is not likely that the annual average of trips to above the Big Rapids will be as large as 50; this number of trips, with an average of 7½ tons each, would make 375 tons per annum, which is probably not too small.

As before mentioned, the land belongs mainly to non-residents, and the supplies which are taken up over the rapids are almost exclusively for the use of parties who are cutting lumber in the winter season.

Inquiry developed the fact that the great bowlders in the Big Rapids cause the logs which are driven down the river to collect in jams, and it is evidently to save expense in the driving of logs that the improvement is largely if not mainly desired.

In the running of boats and driving of logs considerable labor is employed, which might be dispensed with were the river less obstructed; thus effecting a saving to the non-resident lumber owners, but I have been unable to discover wherein it would benefit the community or the general public.

The logs which pass down over the river are manufactured into lumber in New Brunswick.

The improvement of these rapids, if undertaken, would ultimately cost a sum which could hardly be less than $25,000, being at least $6.66 per ton for the estimated freight passing the rapids in ten years.

There are other features of this subject which might be mentioned, but the part already outlined seems sufficient to justify my opinion that the Big Rapids of the St. John's is not worthy of improvement at the public expense.

Very respectfully, your obedient servant,

JARED A. SMITH,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF ST. GEORGE'S RIVER, MAINE, FROM WARREN TO THOMASTON.

UNITED STATES ENGINEER OFFICE,
Portland, Me., November 30, 1886.

GENERAL: I have to submit the following report upon a preliminary examination of the St. George's River from Warren to Thomaston, Me., made in compliance with a requirement in river and harbor act of August 5, 1886, the duty having been assigned to me in letter from Chief of Engineers dated September 27, 1886.

On the 10th of November I visited the river, and in company with the selectmen of the town and other prominent citizens, in a steamlaunch, passed over the portion of the river for which improvements are desired. This was at a high stage of water, which, of course showed the river under the most favorable conditions.

Later in the day, at very near low water, I made a more careful examination of the part included within a mile from Warren, where most of the improvements are required.

Below Thomaston the river is really a tidal arm of the sea, and is included in the maps of the Coast Survey.

Above Thomaston the river is comparatively narrow, though parts have considerable width; the widths were estimated to be from about 200 feet to 800 feet at high water.

The tides affect the river as far as the village of Warren, which is approximately 6 miles from Thomaston by the channel of the river.

At Warren the mean rise of the tide was estimated to be 6½ feet; no record has been kept at Warren for exact data in this particular.

At the village of Warren the river is crossed by a bridge, and close by is a dam over which the water falls 11 feet when the tide is out, and below the dam the water at that stage is rapid for several hundred feet. At high tide the water below is backed up to the dam. Strictly speaking there is no wharf in the village, but a retaining-wall of logs and timber, filled in behind, forms a very good substitute, where vessels might land at high water.

Below this landing, which is adjacent to the shoe factory, the water will not average more than 2 feet in depth for a distance of 800 to 1,000 feet.

Several hundred feet further down is a bar, apparently caused by small bowlders which have stopped the drifting sand and mud. The depth over this bar is not more than 2 feet at mean low water.

About three-fourths of a mile below the wharf is a place known as the "Ripplings." At high water no obstruction is apparent at this place, but at low water there is a fall of more than a foot, and a rapid of perhaps 200 feet in length. Originally there extended entirely across the stream a bar of bowlders, mainly within a width of 50 feet, the length of the bar across the stream being estimated as somewhat more than 200 feet.

On the east side a channel about 50 feet wide was cleared by the citizens many years ago. Below the "Ripplings" there are a few places where large bowlders are in the way of navigation, and at one point at least there is a small bar. About 3½ miles below the village the river is crossed by the Knox and Lincoln Railroad. The draw in the bridge is at right angles to the track, and the piers are neither well located nor parallel to the current of the stream.

Two hundred to three hundred feet below the railroad bridge is the highway bridge owned jointly by the towns of Warren and Thomaston. In this bridge there is at present no draw at all, owing to a dissension between the two towns regarding the proper place for such a span. A draw-span formerly existed, and this is now closed in a temporary manner so that it may be removed in case of necessity, which is not, however, likely to arise at any early day. A float passed through the draw of the railroad bridge would not pass near the old draw-span of the bridge below, and the bridges being so close together it would be both difficult and dangerous to attempt to pass a vessel of any considerable size through the draws. Any improvement of the river to be of benefit should give a high-water depth of not less than 12 feet, and

even this would not admit of any considerable commerce, owing to the short time in which vessels of any size would be afloat.

The information thus far available is not sufficient for a careful estimate, but it is believed that a good channel of not less than 12 feet at high water and 100 feet wide in the narrowest place may be obtained at an expense not exceeding $15,000 for dredging and removing bowlders.

The channel for 800 to 1,000 feet below the wharf would of necessity be dredged a depth of about 4 feet, which, owing to the fall at the "Ripplings," would probably not give more than 4 feet at low water.

Whether the channel so dredged would remain permanently is a question of some doubt. Above Warren there are several small lakes (or ponds, as locally known) which serve as reservoirs and prevent any extreme fluctuations from freshets in the river, and they receive the deposits from drift, so that but comparatively little passes into the tidal water below.

To ascertain whether the improvements indicated are required by the necessities of business or commerce, I made careful inquiries into the present and prospective demands.

As may be inferred from the fact that the highway bridge below has at present no draw, there are no statistics of the arrivals or departures of vessels. Like many other places on the coast of Maine, Warren has in time past been the location of large ship-building interests; and it was for the purpose of taking out vessels built there that the channel was cleared through the "Ripplings," as already mentioned.

A published book of nearly 700 pages, entitled "Annals of Warren," gives a list of 269 vessels built at Warren prior to 1868, with the tonnage, names of builders, and owners; this is, however, a thing of the past.

The river above tide-water within the village and town affords a considerable water-power, which is, however, but little utilized at present. A mill for manufacturing woolen cloths gets most of its power from the river. A saw-mill, which does too little work to figure as a commercial enterprise, also gets its power from the same source, as does a powder-mill further up the stream.

A shoe factory employing 125 operatives is among the industries of the place, but its freight business would hardly be conducted by sailing vessels in any event.

The woolen mill will consume from 500 to 600 tons of coal per year. It uses about 400,000 pounds of wool and about the same weight of soaps, dye-stuffs, etc., annually.

In addition to the above it is estimated that the private consumption of coal is as great as 2,000 tons per annum, which would be vastly greater were the price reduced by cheaper transportation.

It is also estimated that an annual amount of 500,000 feet of lumber is consumed in the community.

The coal cost about $1.50 per ton more by reason of cartage and other freight than it would if delivered by vessel at a wharf in the village. The lumber costs about $1.50 per thousand more than it would if similarly received. On the present business of the place, by the estimates given, this would effect a saving of $4,500 on the items of coal and lumber.

There are also many other items, such as corn, grain, and flour, on which a saving would accrue by a cheaper freight. It will be seen, however, that the benefits are mainly local, and although it would pay to the locality a considerable dividend on the amount expended, the river can hardly be considered as worthy of improvement by the Gen-

eral Government. There are many other items as possibilities for the future, which may then change the situation.

The hills are filled with limestone and covered with wood; the ice upon the ponds and the harvests of the fields may enter into future enterprises. A draw may also be put in the bridge below.

But all these are indefinite, and, in my opinion, cannot justify a present recommendation that the channel be improved by the General Government.

Very respectfully, your obedient servant,

JARED A. SMITH,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF MATINICUS ISLE, MAINE, WITH A VIEW TO A HARBOR OF REFUGE.

UNITED STATES ENGINEER OFFICE,
Portland, Me., May 9, 1887.

SIR: I have the honor to submit the following report of a preliminary examination of Matinicus Isle, with a view to a harbor of refuge, as required by the river and harbor act of August 5, 1886, and instructions from the Chief of Engineers, U. S. Army, dated September 27, and October 28, 1866.

* * * * * * *

Inquiries were made on the following points, viz:

(1) Statistics of wrecks at or near Matinicus.

(2) The nature of the navigation to receive a benefit from a harbor of refuge, and its probable effect upon freights, insurance, individual losses, or general commerce.

(3) Any fishing interests which would be benefited by the construction of a harbor of refuge.

The only definite information on the subject which I have been able to obtain is a list of vessels which have been wrecked in the vicinity of Matinicus since 1840. The list gives the names of two ships, one bark, two steamers, eleven brigs, and thirty-six schooners, besides thirty schooners not named, all of which were either wrecked or driven ashore. Of these, one ship, one bark, two steamers, seven brigs, and twenty-six schooners were a total loss.

The dates of the wrecks could not be ascertained, and it seems probable, therefore, that most of them were not recent.

In addition to these I have made many personal inquiries, with the following result:

(1) The agent of the International Steamship Company informs me that those steamers would hardly make a refuge there in any event, because, in case of a storm which would compel them to seek a port, they could, with at least equal convenience, find a harbor upon the mainland, where they could communicate by telegraph and mail and send passengers and freight by other routes if they were disabled.

(2) I have been informed by officers of the Revenue Marine Service and others that the vessels of our coasting trade, which include nearly all that pass within sight of Matinicus at the present time, rather avoid the vicinity, it being considered more dangerous than the open sea, owing to the rocky character of the shores and the bottom.

(3) The harbor of Rockland, which is a good refuge from storms, has its entrance but 20 miles north of the entrance to Matinicus Roads.

(4) An examination of the location and of the very complete Coast Survey charts indicates that the only place near the island suitable for a harbor of refuge is in Matinicus Roads, between Matinicus and Ragged islands. This anchorage is already somewhat protected by the islands named, as well as by the two smaller ones, Ten Pound and Pudding islands.

The harbor is open to storms from easterly directions, and also from south to west.

To afford any considerable additional protection it would be necessary to construct a breakwater at least 3,000 feet long on the reef which extends from Ragged Island on the southwest side of the roads; to construct a second of about 1,500 feet in length from the point opposite on Matinicus Island; a third of about 1,500 feet in length between Ten Pound and Matinicus Islands; and a fourth, about 350 feet long, from Pudding Island to Ragged Island. The expense of these works would be very great.

Coasting vessels would hardly attempt to put into such a place except in time of absolute peril, and in most cases it may be doubted whether any advantage would be obtained by anchoring to leeward of one of the islands or running for harbors on the mainland.

There is no doubt that a few fishing vessels would be benefited by such a port, but the outlay would be entirely disproportionate to the gain.

It is my opinion that the rates of the marine freights or insurance would in no wise be lessened by a harbor of refuge at Matinicus, and that the general commerce of the country would not be benefited to any considerable extent.

From the points given I do not consider the harbor worthy of improvement as a harbor of refuge.

Very respectfully, your obedient servant,

JARED A. SMITH,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF FALMOUTH HARBOR, MASSACHUSETTS.

ENGINEER OFFICE, U. S. ARMY,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report of the preliminary examination of Falmouth Harbor, Massachusetts, provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 11th instant:

Falmouth Harbor is about 2 miles east of the strait of Wood's Holl, the easternmost of several passages between Buzzard's Bay and Vineyard Sound.

From Nobska Point, on the west, to Falmouth Heights, on the east, on a straight line across the harbor, which faces the southeast, is about 3 miles, and the depth of the harbor, measured from this line to the most northwesterly portion of the harbor, is about three-fourths of a mile.

There is much shoal water near the shore, especially on the eastern side of the harbor, but in the outer portions the soundings average from 4 to 5 fathoms.

It is exposed to winds from the west by south round by the south to east, and is not used for shelter except in westerly and northerly winds. Inside the beach are several ponds, the principal of which are Salt and Fresh ponds. The outlet of neither of these ponds is navigable.

Salt Pond, which is separated from the harbor by a narrow strip of land, is stated to have an area of about 65 acres and a depth at some places of about 20 feet.

Fresh Pond is about one-third of a mile from the beach, and is stated to have an area of about 40 acres, and to have in some portions a depth of 90 feet. The stream which forms its outlet, the bed of which is said to be boggy to a considerable depth, was nearly dry when I saw it. Its mouth is obstructed by sand and is shifted along the beach as in the case of the outlet of Menemsha Pond, but probably not to so great an extent.

The item in the river and harbor act of August 5, 1886, providing for an examination of the habor of Falmouth, indicates that the object contemplated is a harbor of refuge.

To make the present harbor of Falmouth a harbor of refuge in all weathers would require the construction of a breakwater running southeasterly from Nobska Point as a protection in storms from the southwest, which have a rake or sweep up the entire length of Vineyard Sound, and another from Falmouth Heights running southwesterly, as a cover in easterly and southeasterly storms in which the wind has a long range from Nantucket Sound, except as a partial protection is afforded by numerous shoals in these directions. If these breakwaters should be joined there would be required two openings for vessels, one on the east and the other on the west side of the harbor; but it would probably be better, in case of the construction of the works required to make Falmouth Harbor a harbor of refuge, to leave one wide opening between the two breakwaters.

In respect of the making of Fresh Pond into a harbor of refuge, which is, I understand, the object of the promoters of the legislation providing for this preliminary examination, or of Salt Pond, the objections to both are precisely the same as those stated in the report of this date of my preliminary examination of Menemsha Pond. The works required and the cost would be about the same in the one case as in the other, but Menemsha Pond would be more valuable than either Salt or Fresh Pond, by reason of its size and the proximity to the commerce which passes through Vineyard Sound.

Vineyard Haven, on the other side of Vineyard Sound, lies nearly opposite Falmouth Harbor and but 4 miles distant, and is a natural harbor of refuge already provided with light-houses. It is much more conveniently situated in respect of the usual route of vessels passing through the sound, and can be completely covered from the only storms to which it is now exposed, those from the northeast, by two thirds of the length of breakwater that would be required to make the present harbor of Falmouth a harbor of refuge, and it is not practicable to use either of the ponds at Falmouth for the reasons already stated.

I am, therefore, of the opinion that Falmouth Harbor does not promise such benefit to commerce as to justify any expenditure upon it by the United States, and is not worthy of improvement.

Very respectfully, your obedient servant,

GEORGE H. ELLIOT,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF COTTAGE CITY HARBOR, MASSACHUSETTS.

ENGINEER OFFICE, U. S. A.,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report of the preliminary examination of Cottage City Harbor, Massachusetts, provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 10th instant.

Cottage City is on the northeastern part of the island of Martha's Vineyard, about 1 mile from the East Chop, at the entrance into Vineyard Haven.

The shore in its front is slightly convex, but it runs approximately straight for about 2 miles, and there is no protection in any winds except westerly winds.

It is a popular place of summer resort, and is occupied as such exclusively. Many thousand passengers are carried to and from it in summer by steamers from New Bedford and Wood's Holl, but there is no other commerce, and no vessels anchor in front of the place except in summer, and these are the yachts belonging to the cottagers.

There is no demand for a harbor of refuge for general commerce at Cottage City, and it has not been suggested; but the object of the promoters of the legislation contained in the river and harbor act of August 5, 1886, providing for this preliminary examination, is enlarging the outlet of a tidal pond in the village named in the charts of the Coast Survey Squash Meadow Pond, and locally Lake Anthony, to enable it to be used for a harbor by the yachts before mentioned and incidentally for fishermen. This pond contains, as measured on the Coast Survey charts, about 40 acres, and the ruling depth is from 7 to 8 feet, but in some portions the soundings are, it is said, 10 feet or more. The outlet is about 20 feet wide, and its depth is probably not more than 1 or 2 feet at low water.

To provide a means of access for yachts would require a canal to be cut through the beach, with a depth of, say 8 feet at mean low water, extending from the 8-foot curve in the pond to the 8-foot curve outside, a length of 800 or 900 feet; also the construction of jetties on either side of the outlet of the canal to protect it from being obstructed by sand drifted along the beach in storms.

There is no present or prospective demand of commerce for improvement at this place, or any desire, as far as I have been informed, except for the opening of the pond for the purpose before mentioned.

The excellent harbor of Vineyard Haven is close at hand, and both for fishermen and yachts a harbor in Lake Anthony would be a convenience simply.

I am therefore of the opinion that Cottage City Harbor does not promise such benefit to commerce as to justify any expenditure upon it by the United States and is not worthy of improvement.

Very respectfully, your obedient servant,

GEORGE H. ELLIOT,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF MENEMSHA HARBOR, MASSACHUSETTS.

ENGINEER OFFICE, U. S. A.,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report of the preliminary examination of Menemsha, Martha's Vineyard, Mass., provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 10th instant.

Menemsha Bight is an indentation in the form of a regular sweep or curve in the southern shore of Vineyard Sound, and is, at its middle point, about 3 miles east of Gay Head and about 12 miles west of Vineyard Haven, in the island of Martha's Vineyard.

It faces the north, and on a line running about east and west and connecting the points where the shore of the bight curves round into the general trend of the shore of this part of the island the distance between these points is about 3 miles. The depth of the bight, or the distance from the middle point of this line to the most southerly portion of the bight, is about 1 mile. The water is deep, the major part of the soundings given on the Coast Survey chart being in excess of 5 fathoms, and in the deepest part over 9 fathoms. It is exposed to winds from the west by north round by the north to northeast. About one-half mile eastward of the most southerly portion of the curve of the bight a tidal stream, which is the outlet of Menemsha Pond, empties into the bight, with a depth of about 7 feet on the bar at high water. This pond is about three-eighths of a mile from the shore of the bight, and has an area, as shown on the Coast Survey chart, of about 600 acres.

The soundings of the pond are not given on the chart, but I was informed by Mr. Tilton, a citizen of Martha's Vineyard, whom I met during my examination, that about two thirds of it is deep and that some of it is 26 feet or more.

The tidal outlet is about one-half mile long and tortuous, with a shifting, sandy bottom. Its mouth also shifts along the shore, with an extreme range of lateral movement of about 1 mile. The pond is used as a harbor by small fishing vessels, and the fishermen, when the mouth of the creek becomes so much obstructed as to make it difficult to get their vessels in and out, open a new mouth for it.

The item in the river and harbor act of August 5, 1886, providing for a preliminary examination of Menemsha indicates that the object contemplated is a harbor of refuge. To provide a harbor of refuge in the bight would require a breakwater across the mouth of the bight, with one, perhaps two, openings for the ingress and egress of vessels, and the form of the bight is such, that in order to inclose a harbor of refuge sufficiently capacious for the wants of the immense number of vessels that pass through Vineyard Sound, estimated at about 30,000 annually, the length of breakwater required would not be less than from 2 miles to 3 miles.

Fortunately, the natural and capacious harbor of refuge at Vineyard Haven, which is more conveniently situated, is already provided with light-houses, and is completely sheltered in all storms except from one direction, is near at hand, and complete protection of this harbor can be secured by a much shorter line of breakwater.

I will now consider the making of Menemsha Pond into a harbor of refuge, which is, as I am informed, the object of the promoters of the egislation providing for this examination.

For general commerce there would be required the excavation of a canal not less than 18 feet deep at mean low water, and probably not less than a mile long, connecting the deep water of the pond with the deep water of the bight. There would also be required jetties projecting into the bight on either side of the canal to protect the mouth from the sand drifted along the shore. Vessels could not sail through the canal, and tugs would be necessary for towing them into the pond and from it, when the weather would enable them to depart.

This would be a slow and expensive operation, and no one who has seen a fleet of coasters running for Vineyard Haven on the approach of a storm need be told that tugs could not serve vessels fast enough in such circumstances, and that Menemsha Pond is impracticable for a harbor of refuge for general commerce, even if the objection that ice would prevent its use in winter, the season that it would be most required, were not an insuperable one.

In respect to the use of the pond for small fishing vessels, the fishermen appear now to keep open the mouth of the creek in their own way, without much expense or trouble, sufficiently for their purposes, and the construction of jetties to keep it permanently open would cost more than the probable increase of this use of the pond would warrant.

I am of the opinion, therefore, that neither Menemsha Bight or Menemsha Pond promise such benefit to commerce as to justify any expenditure upon them by the United States, and that they are not worthy of improvement.

Very respectfully, your obedient servant,

GEORGE H. ELLIOT,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF BAR IN ST. CLAIR RIVER, MICHIGAN, OPPOSITE SAINT CLAIR CITY.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 9, 1886.

SIR: In accordance with instructions conveyed by letter, dated office of the Chief of Engineers, September 27, 1886, and in compliance with the provisions of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report in regard to each of the following localities, and an expression of opinion in each case as to whether it is worthy of improvement by the General Government, viz: Bar in St. Clair River, Michigan, opposite Saint Clair City.

* * * * * * *

The Lake Survey chart of the Saint Clair River shows this bar or shoal in sufficient detail to indicate the character of the improvement to be made, if any, and to furnish the information requisite for a general estimate.

It is situated nearly in mid-channel, opposite to and extending beyond the upper end of the city of Saint Clair. It is about 4,200 feet long between the 18-foot curves, and about 600 feet wide, with a minimum depth of about 4 feet.

A much smaller shoal lying off the lower end of the larger one appears to have not less than 18 feet on it, and is therefore not considered.

The bar forms a middle ground with a good channel on either side of it. The Western Channel, the one adjacent to the city of Saint Clair, is the deeper, and although narrower is still 600 feet wide. Nearly opposite Saint Clair are the Canadian towns of Moretown and Courtright, the latter being a station on the Saint Clair and Petrolia Division of the Michigan Central Railroad, whence connection is made by ferry with the Michigan system of railways.

The middle ground is somewhat in the way of a ferry, and gives rise to some inconvenience in communicating between the two sides of the river.

The general commerce passing up and down the river is very great, possibly not less than 15,000,000 tons per annum. This shoal does not offer much obstruction to this, as the channel on either side is of sufficient width and depth for easy navigation by any vessel now on the lakes.

The obvious improvement is the removal of the shoal to the depth of 17 feet. The amount of dredging to do this is estimated at 160,000 cubic yards, and the cost at $40,000.

This would only be for present navigation. When the channels now in course of improvement shall have attained their full depth, the benefit of the improvement to 17 feet will be lost, unless the depth be then increased to 20 feet.

In view of the necessity existing elsewhere for improvements of greater importance, I find myself unable at this time to express the opinion that this bar is worthy of improvement by the General Government.

Respectfully submitted.

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF GRAND RIVER, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Grand Rapids, Mich., January 29, 1887.

SIR: In compliance with printed letter from office Chief of Engineers, dated Washington, D. C., September 27, 1886, I have the honor to make the following report with reference to the preliminary examination of Grand River, Michigan, called for in said letter.

In 1880 a survey of the river between Grand Rapids and Grand Haven was made under the direction of the late Major Harwood, Corps of Engineers. The field work was commenced early in September and completed in December.

Upon this survey was based Major Harwood's project for obtaining a low-water channel 100 feet wide and 4 feet deep, at an estimated cost of $25,000.

The first appropriation for carrying out this project was made by act approved March 3, 1881, $10,000. By act approved August 2, 1882, an additional appropriation of $15,000 was made. The amount available from these appropriations July 1, 1884, was $386.04. At this time the river had been deepened to 4 feet, above the Lake Shore and Michigan Southern Railway Bridge, or for a distance of 2½ miles. By act approved July 5, 1884, an additional appropriation of $25,000 was made,

Before submitting a project for the expenditure of this amount authority was asked to make a special survey to cover the localities embracing the shoals. This survey extended from the foot of Ganoe's Canal to a point 11¼ miles down-stream, and was necessarily continuous on account of the number of the shoals and their nearness to each other. The survey showed that for this portion of the river the lengths of the cut to secure depths of 4.5 feet, 5.5 feet, and 6.5 feet would be 6.18 miles, 9.54 miles, and 10.57 miles, respectively, with several shoal places below the limit of the survey to be taken account of in securing the depth stated above. But little benefit was found to have resulted from the work done in previous years.

A contract was entered into March 20, 1885, with Robert Finch, of Grand Haven, to dredge a cut 60 feet wide and 4.5 feet deep, commencing near the upper limit of the survey and extending down stream as far as funds would permit. Work was commenced May 13, 1885, and closed in July, 1886. This gave, for the time, a continuous channel 60 feet wide and 4.5 deep from the foot of Ganoe's Canal to the foot of Hare's Bar, a distance of 11¼ miles.

The greater part of the material removed was sand, and I can see no reason for anticipating anything like permanency for the channel, as the main causes that were in operation to maintain the river at its normal depth before work commenced are active now to restore its bed to its former condition. One small steamer with a maximum draught of 30 inches makes three round trips per week between Grand Rapids and Grand Haven during the season of navigation.

I have stated the above facts to show that no further examination of the river is necessary with a view to its improvement by dredging, and in considering any other plan for improving the river itself it is necessary to take account of other facts.

The stage of water sometimes reaches 16 feet, and at very low water in the summer the discharge is so small that there is a notable difference between the morning and evening gauge readings, due to the quantity of water taken from the river by the various factories, mills, etc., along its banks.

In my opinion deep-water connection with Lake Michigan can only be secured by canal, outside of the river banks, using the river as a feeder. To determine the feasibility of such a plan and arrive at anything like a correct estimate of its cost will require an extensive detailed survey covering not only both banks of the stream but in all probability other lines with a view to selecting the most suitable.

I do not consider the river itself worthy of improvement.

The freight receipts during the past year are reported by the firm owning the steamer already mentioned to have been $12,325.58. The commercial statistics of Grand Rapids were given by Major Harwood in his original report on the river. (Report of Chief of Engineers, 1881, page 2225.)

Grand River, below Grand Rapids, is situated within the limits of the Michigan collection district of Michigan. The nearest port of entry is Grand Haven, at the mouth of the river, where also is the nearest light-house.

Very respectfully. your obedient servant,

D. W. LOCKWOOD,
Captain of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF NORTH RIVER, MICHIGAN, BETWEEN ESSEX AND NORTH BRIDGES.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 9, 1886.

SIR: In accordance with instructions conveyed by letter dated Office of the Chief of Engineers, September 27, 1886, and in compliance with the provisions of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report in regard to each of the following localities, and an expression of opinion in each case as to whether it is worthy of improvement by the General Government, viz: * * * North River, Michigan, between Essex and North Bridges. * * *

After diligent inquiry I have been unable to ascertain the location referred to.

A point of so little general importance as to be unknown to the persons consulted is, in my opinion, not worthy of improvement by the General Government.

Respectfully submitted.

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF BIDDLE'S POINT AT MACKINAC HARBOR, MICHIGAN, WITH A VIEW TO A BREAKWATER.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 9, 1886.

SIR: In accordance with instructions conveyed by letter dated Office of the Chief of Engineers, September 27, 1886, and in compliance with the provisions of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report in regard to each of the following localities, and an expression of opinion in each case as to whether it is worthy of improvement by the Gereral Government, viz: * * * Biddle's Point, at Mackinac Harbor, Mich., with a view to a breakwater. * * *

By the river and harbor act approved March 3, 1879, a survey and examination was directed for a breakwater at Mackinac, Mich.

The work was assigned to the late Major Harwood, who submitted his report (with map) under date of January 19, 1880 (printed at page 2055 *et seq.*, Annual Report of the Chief of Engineers for the fiscal year ending June 30, 1880).

This report and map furnished ample data for the preparation of a report upon the question of an examination and survey at Biddle's Point, since one of the breakwaters proposed by Major Harwood was located at this very point.

It seems quite unnecessary to repeat the description of Biddle's Point, given in the report referred to.

The conditions described remain unchanged except that possibly the shore-line may have slightly receded, not, however, to such extent as to render it necessary to modify Major Harwood's estimates on that account. But the increase meanwhile in the cost of the principal material (timber) entering into the construction has been considerable, and it would not now be safe to estimate the cost of a breakwater located and built as he proposed at less than $125,000.

The commerce of Mackinac is probably less now than at the time Major Harwood's statistics were prepared. Hereto annexed is a statement of the entrances and clearances for the year 1884–'85, the latest available. Mackinac was discontinued as a sub-port on July 1 ,1885.

The former report was not made under the requirement that the engineer should express an opinion as to whether the harbor is worthy of improvement by the General Government, a condition which now exists. However, the engineer gave a mild support to the proposition to form a snug harbor.

The occasions when a landing at Mackinac is rendered impracticable by heavy seas, or the harbor sought for refuge are comparatively rare.

This, taken in connection with the decadence of its commerce, due to the greater prominence of the neighboring towns of Cheboygan, Mackinac City, and St. Ignace, compels me to express the opinion that the harbor is not worthy of improvement by the General Government.

Respectfully submitted.

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

COMMERCIAL STATISTICS.

CUSTOM-HOUSE, GRAND HAVEN, MICH.,
Collector's Office, November 10, 1886.

SIR: Your letter November 8, requesting to furnish you, through the deputy collector at Mackinac, all the particulars relative to the commerce at Mackinac, the collections, arrivals, and clearances, etc., during the latest complete year, received.

In reply I have the honor to state that Mackinac has been abolished as a custom port, July 1, 1885, and inclose you, therefore, statement of the transactions, from July 1, 1884, to June 30, 1885, besides the lines of steamers touching the above-named port.

I am, sir, very respectfully, your obedient servant,

C. N. A. BROWN,
Special Deputy Collector.

General O. M. POE,
Corps of Engineers, U. S. A.

Transactions of the port of Mackinac during the fiscal year July 1, 1884, *to June* 30, 1885 (*domestic.*)

[District of Michigan, port of Grand Haven.]

Entered:	
Number of vessels	73
Tonnage	37,610
Cleared:	
Number of vessels	75
Tonnage	37,850
Total vessels	148
Total tonnage	75,460
Collections	$52.69
Expenses	$602.25

Lines of steamers touching the port of Mackinac to, viz:
Leopold and Austrian Line.
Hannah Lay and Company Line
Northern Michigan Line.
Cheboygan, Mackinac and Sault Ste. Marie Line
Grummond's Line from Detroit.
Detroit and Mackinac Line (steamers *City of Mackinac* and *City of Alpena*).
Green Bay and Mackinac Line.

C. N. A. BROWN,
Special Deputy Collector.

PRELIMINARY EXAMINATION OF HARBOR AT FORESTVILLE, LAKE HURON, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 9, 1886.

SIR: In accordance with instructions conveyed by letter dated office of the Chief of Engineers, September 27, 1886, and in compliance with the provisions of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report in regard to each of the following localities, and an expression of opinion in each case as to whether it is worthy of improvement by the General Government, viz, * * * harbor at Forestville, Lake Huron, Michigan. * * *

Forestville is situated on the shore of Lake Huron, about 47 miles north of the foot of the lake (head of St. Clair River) and about 14 miles south of the harbor of refuge at Sand Beach.

A small stream empties into the lake at Forestville, but it is not of sufficient capacity to be available for harbor purposes.

* * * * * * *

What the citizens want is a substantial dock, or wharf, built from the shore into the lake, to take the place of private docks destroyed by storms. But this is not such an improvement as would be of any value to the general commerce of the lakes. For this purpose a harbor at this point would necessarily be wholly artificial. The protecting works need not be so extensive as at Sand Beach, but the exposure is nearly as great, and they would have to be built equally strong.

The location best suited to the purpose is southeast from the village, where the 18-foot curve is at a distance of about 2,000 feet from the shore. To be of any value as a harbor a breakwater, say 2,000 feet long, should be built in 22 feet of water at a distance of not less than 3,000 feet from the shore, with returns towards the shore provided with suitable entrances.

The aggregate length of the structures would be in the neighborhood of 5,000 feet, and the resulting harbor would have a capacity sufficient for all the shipping that would resort to it.

The cost would approximate $600,000.

The whole commerce of Lake Huron passes this point, and there can be no doubt but a harbor, if built there, would often be a great convenience to shipping. But the short distance from the harbor of refuge at Sand Beach (only 14 miles) seems to reduce it to a mere convenience.

It surely is not a necessity, and in view of the great cost of constructing a harbor of any value to general commerce, I am constrained to report that in my opinion the harbor is not worthy of improvement by the General Government.

No survey is recommended for the reason that the detail chart of the lake survey at this point is quite sufficient for the purpose of making a general plan, with estimates.

Respectfully submitted.

O. M. POE,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF PIGEON RIVER, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Grand Rapids, Mich., August 25, 1887.

SIR: In compliance with printed letter dated Office of the Chief of Engineers, United States Army, Washington, D. C., October 28, 1886, I have the honor to submit the following report of a preliminary examination of Pigeon River, Michigan, made by me July 6, 1887:

Pigeon River rises in the southern part of Huron County and empties into Saginaw Bay at a point about 23 miles southwest of Point Aux Barques. It has a sluggish current, and near its mouth is from 50 to 100 feet wide and from 4 to 6 feet deep. In the river and harbor act passed August 2, 1882, an examination of the harbor at Caseville, Mich., was provided for, and the late Maj. F. U. Farquhar, Corps of Engineers, in his report dated October 21, 1882, and published in the Report of the Chief of Engineers for 1884, page 2077, stated that he did not regard the harbor as worthy of improvement by the General Government. Caseville is located at the mouth of Pigeon River, and as the stream itself is absolutely of no commercial importance, except for running logs and timber generally, it is presumed that the intention of the act of August 5, 1886, was to have an examination made of the mouth of Pigeon River with a view to determining whether there was any necessity for establishing a harbor there.

At the time of the first examination, in 1882, the mouth of the river had been extended into Saginaw Bay, a distance of about 900 feet, by parallel piers 75 feet apart, and the depth of water between them was about 10 feet at the outer end of channel, and 6 to 8 feet at the inner end. The 12-foot curve was stated to be 400 feet in advance of the end of piers, or one-fourth mile from shore.

At the time stated above, the shipments from and to the port were as follows: 50,000 barrels of salt, 6,000,000 to 8,000,000 feet, B. M., lumber, 12,000 tons pig metal, 50,000 bushels of wheat, and about $200,000 worth of general produce, shipped out by water each season; 20,000 tons iron ore, 1,500 cords of limestone, and about $200,000 worth of merchandise shipped in by water each season.

At the time I made an examination the south pier was a total wreck, and the north pier fast becoming so; the old channel had shoaled up so as to be practically useless except for vessels of very light draught, and shipments by water had virtually ceased. The iron furnace has been shut down for several years, and one saw-mill and one salt-block only were in operation at the time; the latter with a capacity of 4,000 barrels per month. There is little or no lake commerce at this point at present, shipments and receipts being for the most part by rail.

Caseville is a village of about 600 inhabitants and is the northern terminus of the Pontiac, Oxford, and Port Austin Railroad. The closing down of the iron furnace and the death of Mr. Crawford, who owned large interests in the locality and who constructed the old harbor, have caused its present decline.

Any work of improvement at this point would be for the benefit of local commerce only. I do not regard this harbor as worthy of improvement by the General Government, as there exists no public necessity for the same.

Pigeon River is located in the collection district of Huron, Mich. The nearest light-house is at Charity Island. The nearest port of entry is Port Huron, Mich.

Very respectfully, your obedient servant,

D. W. LOCKWOOD,
Captain of Engineers.

The CHIEF OF ENGINEERS, *U. S. A.*

PRELIMINARY EXAMINATION OF CARP RIVER AT LELAND, MICHIGAN, WITH A VIEW TO AFFORDING AN ENTRANCE TO CARP LAKE FOR HARBOR OF REFUGE.

UNITED STATES ENGINEER OFFICE,
Grand Rapids, Mich., October, 1887.

SIR: In compliance with instructions contained in printed letter dated Office of the Chief of Engineers, United States Army, Washington, D. C., October 28, 1886, I have the honor to submit the following report of the preliminary examination of "Carp River at Leland, Michigan, with a view to affording an entrance to Carp Lake for harbor of refuge."

Leland is a town of about 400 inhabitants, although this number varies very materially from time to time; it owed its former importance to the traffic in wood with passing steam-vessels, and to an iron furnace that was at one time operated here, but which has been shut down for a number of years. At present its commerce has dwindled to almost nothing, and its present appearance is that of a town that has been going backwards for years.

In the Report of the Chief of Engineers for 1870, page 148, will be found a report by Capt. F. U. Farquhar, Corps of Engineers, in which the various points bearing on the question of a harbor in this locality are fully discussed.

The following extracts are taken from it:

The Carp River, about three-fourths of a mile long, is the outlet of Carp Lake. Between Carp Lake and Lake Michigan there is a difference of level of about 8 feet.

As to the practicability of improving the harbor of Leland—

The Carp River is so inconsiderable a stream as to preclude any use of it for navigable purposes. As rock is said to be found near the surface, any deepening or widening of the stream itself and carrying out piers into the lake to protect its mouth would be enormously expensive, and, after such expenditure, the outflow would not be sufficient to keep a useful channel into the lake.

As to the necessity for improving the harbor of Leland—

The only necessity that exists for the proposed improvement is the mere local commerce of the place, which, as already stated, now amounts to little or nothing. Although the route of the general commerce of the lake passes within 12 miles of this place, there is no necessity for a harbor of refuge here. Ample natural harbors of refuge are afforded by the Manitou Islands and Grand Traverse Bay.

I fully agree with the foregoing opinions and conclusions.

It is 16½ miles from Leland to Cat Head Light, on the west cape of Grand Traverse Bay; 10¼ miles to the North Manitou, and 15½ miles to the South Manitou. The islands mentioned and Grand Traverse Bay have been used for shelter and refuge since Lake Michigan was first navigated.

As the examination was required to be made with a view to determining the practicability of affording an entrance to Carp Lake, "for harbor of refuge," there are other considerations to be taken into account.

(1) If the channel between the two lakes should be a level cut, the effect of lowering the level of Carp Lake 8 feet should be examined into. In my opinion the results would be of such a character as to preclude the adoption of this plan.

(2) The only other method available would be by lockage, and as this would seriously interfere with free access to the anchorage in Carp Lake it could not be adopted.

For the reasons given, I do not regard this locality as worthy of improvement.

Very respectfully, your obedient servant,

D. W. LOCKWOOD,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF LAKE MICHIGAN AT EMPIRE, WITH A VIEW TO CUTTING A CHANNEL ACROSS THE BAR FROM LAKE MICHIGAN TO BAR LAKE, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Grand Rapids, Mich., August 26, 1887.

SIR: In compliance with instructions contained in printed letter, dated Office of the Chief of Engineers, United States Army, Washington, D. C., October 28, 1886, I have the honor to submit the following report of the preliminary examination of "Lake Michigan at Empire, with a view to cutting a channel across the bar from Lake Michigan to Bar Lake, Michigan."

In the river and harbor act approved June 14, 1880, an examination was directed to be made of Empire Bay, Leland County, Michigan. The late Major Harwood, Corps of Engineers, was charged with this duty, and his report was published in the Report of the Chief of Engineers, United States Army, for 1881, page 2258. There are two Bar lakes in the vicinity of Empire, called respectively North and South Bar lakes, distant from each other a little more than one-half of a mile. The water surface of North Bar Lake is 2 feet above that of Lake Michigan, while that of South Bar Lake is 2½ feet above the same level. The hamlet of Empire is located at the south end of South Bar Lake, and consists of a steam saw-mill, with dock built out into Lake Michigan, a general store, and a few homesteads. The population is only that needed to operate the mill and supply it with logs. As this is the only settlement in the locality, it would seem that the connection with Lake Michigan, if made at all, should be made near it. The deepest soundings in South Bar Lake show only 13 feet, and, with the water surface at the level of that in Lake Michigan, the area comprising 10-feet soundings would be about 2¼ acres in extent, oval in shape, with its longer axis parallel to the shore-line of Lake Michigan. Should a channel be cut between North Bar Lake and Lake Michigan, the reduction in depth would leave an area about 700 feet long parallel to the shore-line of Lake Michigan and about 200 feet wide, with a least depth of 15 feet. This work would, however, be of no use to the present settlement at Empire.

Major Harwood estimated that it would cost $56,000 to connect North Bar Lake with Lake Michigan by a channel 200 feet wide and 15 feet deep, and $34,500 to do the same at South Bar Lake, limiting the depth to 10 feet. I should say that at this date these figures should be doubled.

The connection of either lake with Lake Michigan would be of purely local importance, and I do not regard this locality as worthy of improvement.

The principal interests at Empire are owned by Messrs. Potter & Strothers. The latter informed me at the time of the examination (August 8, 1887) that their shipments for the current year would be about 1,000,000 feet (board measure) lumber, between 400 and 500 cords of wood, and the same of bark, but that they expected to double their shipment of lumber next year.

Very respectfully, your obedient servant,

D. W. LOCKWOOD,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF GRAND TRAVERSE BAY, WITH A VIEW TO CONNECTING IT WITH TORCH LAKE, NEAR EASTPORT, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Grand Rapids, Mich., October 13, 1887.

SIR: In compliance with instructions contained in printed letter, dated Office of the Chief of Engineers, United States Army, Washington, D. C., October 28, 1886, I have the honor to submit the following report of preliminary examination of "Grand Traverse Bay, with a view to connecting it with Torch Lake, near Eastport, Michigan."

Torch Lake is 17½ miles long and from three-quarters to 2¼ miles wide; its general direction is nearly parallel to the east shore of Grand Traverse Bay, with which it is connected at its southern extremity through a series of lakes and short streams. At the time of the examination the difference of level between the waters of Grand Traverse Bay and Torch Lake was found to be 7 feet. The water-level in Lake Michigan at the time was 1.1 feet above zero, while that in Torch Lake was undoubtedly low on account of continued dry weather, so that the normal difference of level may be taken at about 8 feet. Should a connection between the two bodies of water be made, the location of the cut would be somewhere between Eastport and a point a little south of the town of Torch Lake. At the latter place a tramway has been constructed across the neck of land separating the bay from the lake, and here a line of levels was run for determining the difference of level between the two bodies of water and the height of the intervening land. The highest point of the latter was found to be 37.4 feet above the water surface of Grand Traverse Bay, and the distance across about three-quarters of a mile from shore-line to shore-line.

The definite location of a canal in this locality could, as a matter of course, only be determined after a careful and systematic survey of the region between the limits given above, taking into account the harbor facilities at the two extremities, particularly in Traverse Bay. The reason for making the examination at Torch Lake was that there was a cleared line there.

To the east of Torch Lake, and connected with it, there is a net-work of small lakes and streams particularly favorable for getting out timber products, which consist of hard-wood timber, cord-wood, cedar posts, and railroad ties.

At the town of Torch Lake, as already stated, there is a tramway from Torch Lake to Traverse Bay. The Messrs. Cameron, who own it, have a mill at the Torch Lake end and a bridge pier in Grand Traverse Bay from which vessels are loaded with the products of their mill. The senior member of the firm informed me that their shipments this year would be the equivalent of 12,000,000 feet of lumber.

According to the only estimate I have received, there are 500,000 cords of wood and 100,000,000 feet, B. M., hard-wood timber to be shipped from this region, and it is estimated that the value of the former would be increased 50 cents per cord and the latter 50 cents per M if better facilities for shipping—such as would be afforded by a canal, in fact—could be obtained.

There can be no question but that a connection between Traverse Bay and Torch Lake would be of great benefit to the country about and back of Torch Lake, but its benefits would be purely local and the cost of a canal with lock would be great. It is known that part of the heavy cutting would be through rock of some kind, so that without further

knowledge than can be obtained from an examination of the surface of the ground it is impossible to give an estimate of the cost of a canal; besides, the prolongation of the channel into Traverse Bay would have to be protected by piers, constituting a regular harbor.

In view of the foregoing, I feel compelled to state that I do not consider the locality worthy of improvement.

Very respectfully, your obedient servant,

D. W. LOCKWOOD,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF PINEPOG RIVER, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Detroit, Mich., December 9, 1886.

SIR: In accordance with instructions conveyed by letter dated Office of the Chief of Engineers, September 27, 1886, and in compliance with the provisions of the river and harbor act of August 5, 1886, I have the honor to submit herewith a report in regard to each of the following localities, and an expression of opinion in each case as to whether it is worthy of improvement by the General Government, viz: * * * Pinepog River, Michigan. * * *

Pinepog (Pinnepog or Partridge) River is a small stream, less than 25 miles long, lying entirely within the limits of Huron County, Mich. It empties into Saginaw Bay at the town of Port Crescent.

By the river and harbor act approved June 10, 1872, an examination and survey was ordered at Port Crescent, the report upon which, dated February 24, 1873, is printed at pages 304 and 305, Report of the Chief of Engineers for the fiscal year ending June 30, 1873.

That survey was amply sufficient for any purposes connected with the construction of a harbor outside the river, and I reported that "the construction of a harbor here would be at great cost without any adequate benefit to the general commerce of the lakes." My opinion as there expressed remains unchanged in regard to the construction of an outer harbor. The act of August 5, 1886, only mentions Pinepog River, and the further discussion will be limited to it.

The appendix to the above report of February contains the following paragraph, viz:

> It having been suggested that the Pinnepog (or Partridge) River, at the mouth of which Port Crescent is situated, might be made available for the shelter of vessels, an examination of this water-course was made for a distance of about half a mile. The water is backed up by a dam, situated near the mouth, raising it 2.25 feet above the level of the bay. The depth of water thus backed up is from 4 to 6 feet, with some rock at the bottom, but I can not say whether bed-rock or bowlders. Its width varies from 100 to 200 feet. The mouth itself below the dam is almost completely choked up with sand, the accumulation of which is facilitated by the position of the dock diagonally across the mouth.
>
> Of course the dock as well as the dam would have to be removed if such an improvement of the river should ever be contemplated, the water in the river then having a depth of from 2 to 4 feet. The limited width of the river and the uncertainty about its bottom, joined to the objections heretofore stated as to the inaccessibility of the bay, render any recommendation of this scheme out of the question.

In order to ascertain the present condition of the river and the amount of commerce, present and prospective, that would be benefited by its improvement, I communicated with some of the best informed

people of the village of Port Crescent. Several of them united in a letter, from which I extract the following, viz:

The present commerce is composed of lumber, salt, laths, shingles, hoops, staves, headings, cedar posts, coal, merchandise, machinery, and farm produce, to a large extent. There has been a large amount of white sand shipped from this port this season to different ports on the Lakes, principally to Lake Superior. There are two saw-mills, two salt-blocks, two general stores, one flouring mill, besides several stores and business shops of smaller note.

The prospective commerce will be a *marked* increase in manufactories as well as in commodities if the river was rendered safe for vessels to enter, but on account of numerous wrecks of vessels off this port, marine men deem it unsafe to enter or remain here, which is a great detriment to the business interests of the place.

The present condition of the river is, that a bar of sand has been formed at the mouth of the river and partly filled for some distance back. Of the dam, that at the mouth of the river, the upper part went out in the spring of 1885, but the foundations remain there still.

Prior to the time this dam was put in, vessels had loaded for 80 rods up the river with 200,000 feet of lumber and went out all right, to our personal knowledge.

The nature of the obstructions are sand and foundation of dam at present, and with low water the river is 180 feet wide at narrowest place, and in some places 12 feet deep, others not over 4.

It might be rendered navigable for miles, but about 200 rods would be sufficient for the present.

It would be a public interest in the way of a place of safety for vessels on the bay in case of storm, and by a safe entrance it would cause a large traffic with the outside, making a market for the products of this place, which is partly surrounded by a very fertile agricultural country, and no other improvement would give this place so bright a future as the proposed opening of Pinnepog River.

The town of Port Crescent has increased in population about 200 per cent.; in business it has increased to a considerable extent.

Another prominent citizen writes as follows, viz:

Your letter of inquiry, dated November 8, duly received. Not being familiar with the matter to which you refer I had to confer with others, hence the delay. I believe the present obstruction at the mouth of the Pinnepog River is sand and an old dam. The river can be made navigable for moderate sized vessels at no great outlay. The town has not increased to any extent in population or business, but I am satisfied that the present condition of the river is a great detriment to business.

It is to be presumed that these statements make the best arguments possible in favor of the proposed improvement.

I do not believe any improvement of the river would render the harbor of much use as a harbor of refuge.

Vessels already in it would undoubtedly be well protected during storms, and this fact would give greater confidence to mariners and induce them to more readily resort to the place.

The region tributary to Port Crescent is limited in area and in products. From the very nature of things there could never be any considerable commerce from the port; certainly not sufficient to warrant any large expenditure.

To make the harbor available would require piers on either side of the entrance extending to at least 14 feet of water, and the excavation of a channel of 100 feet in width for a distance of at least half a mile.

All this would cost more than seems to be warranted; hence, whilst sympathizing with the people in their desire to better their facilities, I am compelled to report that, in my opinion, Pinnepog River is not, at this time, worthy of improvement by the General Government.

A survey and examination at this point sufficient for the preparation of a plan and estimates for the improvement of the river would cost about $1,200.

Respectfully submitted,

O. M. Poe,
Lieut. Col. of Engineers,
Bvt. Brig. Gen., U. S. A.

The Chief of Engineers, U. S. A.

LIMINARY EXAMINATION OF TORCH LAKE CHANNEL, LAKE SUPERIOR, MICHIGAN.

UNITED STATES ENGINEER OFFICE,
Milwaukee, Wis., November 15, 1886.

R: I have the honor to report that in compliance with your instruc-
s of October 28, 1886, an examination was made by me during the
ent month of Torch Lake Channel, Lake Superior, Michigan, as
d for by the provisions of the river and harbor act of August 5,
.

orch Lake is 5¾ miles long and 1¾ miles in its widest part, with a
imum depth of 155 feet. Its longer axis lies approximately north-
and southwest, and the lake itself was connected with Torch Bay,
rm of Portage Lake, by a narrow circuitous channel of 6 and 7 feet
ater, with a bar at its Torch Lake end with but 3 feet of water on it.
lbout twenty years ago the Calumet and Hecla Mining Company,
h has a stamp-mill on Torch Lake, built a landing-dock in Torch
e Channel for landing coal and supplies from the regular lake
mers, from which dock it was removed by tugs and lighters. At
time the company also did some dredging, but only to facilitate
gation for lighters.

ven years later it was decided to deepen the channel to steamer
h. For this purpose a cut was made 60 feet wide and 13½ feet deep,
e same depth as is available through the Portage Lake Ship Canal.
is cut, 2½ miles long, does not follow the natural channel, but a
ified line, some portions of which were cut through solid land. The
l cost of these improvements somewhat exceeded $100,000, and the
k was done under a charter from the State of Michigan.

p to the present year no tolls have been charged, but this year a
has been established, and a copy* of this rate is inclosed herewith.
o other mining companies, the Osceola and Tamarack, have stamp-
s on Torch Lake, and if the Government should undertake the pur-
e and improvement of Torch Lake Channel, would be exempt from
, while the canal company itself would be freed from cost of main-
nce; but the commerce of the lake, although very large, is, after
ntirely local, and, in my opinion, this improvement does not come
in the intent of the river and harbor act of "subserving public
ssity or convenience."

herefore respectfully recommend that no work be done at this place
he United States Government.

Very respectfully, your obedient servant,

CHAS. E. L. B. DAVIS,
Captain of Engineers.

e CHIEF OF ENGINEERS, U. S. A.

LIMINARY EXAMINATION OF RED LAKE RIVER FROM GRAND FORKS TO RED LAKE, MINNESOTA.

ENGINEER OFFICE, UNITED STATES ARMY,
Saint Paul, Minn., December 1, 1886.

ENERAL: I have the honor to submit the following report of a pre-
nary examination of Red Lake River from Grand Forks to Red
e, Minnesota, made in accordance with the requirements of sections
d 7 of the river and harbor act of Congress approved August 5, 1886.

* *Omitted.*

The Red Lake River discharges into the Red River of the North opposite the city of Grand Forks, Dak. From the lake to the mouth of the river the distance by water is about 325 miles. The river, which is very tortuous, may be divided into three sections, viz: From Red Lake to the mouth of Thief River, 125 miles; from Thief River to Fisher's Landing, 160 miles; and from the latter point to the mouth of the river, 40 miles.

From Red Lake to Thief River the stream is sluggish, with a general width of 200 feet and depth of 2 feet at low water, flows through a generally open prairie, and is bordered more or less by marshes. This section of the river is all within the limits of the Red Lake Indian Reservation, and has only been navigated by flatboats and bateaux, though it is reported that a small steamboat is under construction at Saint Hilaire, in expectation of settlement of the region. With the exception of occasional bowlders in the bed of the stream no obstructions to a 2-foot navigation exist between Red Lake and the mouth of Thief River.

From Thief River to Fisher's Landing the bed of the stream is encumbered by immense quantities of bowlders and occasional small rapids. The average width is 250 feet. On this section of the river are two dams for utilization of water-power—one at Red Lake Falls, with a head of 15 feet; the other at Crookston, head 10 feet.

From Fisher's Landing to the junction of the river with the Red River of the North the current is sluggish, the width of the stream averaging 150 feet, and depth at low water 2½ feet. The landing was at one time the terminus of the St. Paul and Pacific Railroad (now the St. Paul, Minneapolis and Manitoba Railway), and supplied large quantities of freight and passengers to steamers plying between it and points on the Red River. Since the extension of the railroads the steamboats have been withdrawn from the Red Lake River, which is now spanned near its mouth by an iron highway bridge, thus practically closing the river to Red River boats.

STATISTICS.

Assistant Engineer R. Davenport, who went over the greater part of the ground in November, reports under this head as follows:

With the exception of the area included in the Indian reservation, the country adjacent to Red Lake River is already extensively cultivated, and the productive area is steadily increasing.

The area of Polk County, through the center of which the river runs, is stated to be 1,995,054 acres, of which about 200,000 are cultivated, and wild hay is cut from about 30,000 acres.

The wheat crop of the county in 1886 is estimated at 2,500,000 bushels; oats, 1,200,000 bushels; and other crops in proportion.

There are five villages on the river between Thief River and the outlet: Saint Hilaire, population, 300; Red Lake Falls, population, 1,000; Crookston, population, 4,500; Fisher's Landing, population, 300; and East Grand Forks, population, 300. The population of the county is estimated at 25,000.

The city of Grand Forks, Dak., population, 7,500, is situated on the Red River, opposite the outlet of Red Lake River.

The manufactories, principally flour and lumber, are distributed as follows:

Saint Hilaire, two saw-mills, daily capacity, 50,000 feet, B. M., and one flour mill, daily capacity, 100 barrels, in course of construction.

Red Lake Falls, two saw-mills, daily capacity, 50,000 feet, B. M.; two flour mills, daily capacity, 175 barrels.

Crookston, one saw-mill, yearly capacity, 20,000,000 feet, B. M.; two flour mills, 250 barrels daily capacity.

At Grand Forks there are two flour mills, with a daily capacity of 150 barrels, and two saw-mills of 250,000 feet, B. M., daily capacity. There are from one to five eleva-

tors in each town on the line of the railroads, for storing and handling wheat, etc. At Grand Forks there is a transfer elevator for unloading wheat barges.

About 40,000,000 feet, B. M., of pine logs are cut each year on the waters tributary to Red Lake River.

All transportation, both by rail and water, in this section is at present controlled by the St. Paul, Minneapolis and Manitoba Railroad Company; they own the only line of steamboats and barges now operating on the Lower Red River.

A new railroad line, said to be a branch of the Northern Pacific Railroad, is now in course of construction to Red Lake Falls, and will shortly be extended to the Red River at Grand Forks.

The lumber interest is destined, at a date probably not very remote, to be of great importance in this section, and though there is no pine timber on Red Lake River, it is the only water outlet to a section of country estimated to contain from 10,000,000,000 feet, B. M., to 20,000,000,000 feet, B. M., of standing pine.

Lumbering operations have so far been confined to the headwaters of Clear Water River, one of the principal tributaries of Red Lake River, and to some of the small streams emptying into Red Lake.

The country in the vicinity of Red Lake is, however, covered by immense pine forests, which will be available as soon as the lands now held by the Indians are placed in the market.

With reference to the possible improvement of Red Lake River, from the information obtained during this examination, as briefly set forth in this report, it would appear that the river from Red Lake to Thief River, a distance of 125 miles, is fairly navigable without much if any improvement.

From Thief River to Fisher's Landing, a distance of about 160 miles, the river can only be made navigable by the construction of a series of locks and dams, an expensive improvement that the requirements of commerce can hardly be claimed to demand, as yet, at any rate.

From Fisher's Landing to the outlet, 40 miles, but little improvement would be necessary other than the removal of snags, overhanging trees, and possibly a little dredging.

Of Red Lake, Assistant Davenport reports:

The construction of a reservoir dam at Red Lake and the equalization of the discharge would be of material benefit to such portions of Red Lake River as are navigable, without the construction of locks and dams, and would be of incalculable benefit to the Red River of the North in connection with the present project of improvement, by increasing the volume of water during the low-water period, and in reducing the spring floods, which are often very disastrous in the Red River Valley.

It appears that while the Red Lake River is susceptible of improvement for navigation by light-draught steamers, the cost of such would be out of all proportion to the present requirements of its valley, or to any public benefit to be derived from an improvement. Red Lake could probably be converted into a reservoir, and, could it be controlled in the interest of navigation, would probably form a valuable adjunct to the improvement of the Red River of the North from Grand Forks to the northern boundary line.

A complete survey of Red Lake and River, with a view to creating a reservoir, would cost about $30,000.

As to the Red Lake River I am of opinion that it should not at present be classed among the streams worthy of improvement by the General Government.

Very respectfully, your obedient servant,

CHAS. J. ALLEN,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF NOXUBEE RIVER, MISSISSIPPI, TO ASCERTAIN WHETHER IT CAN BE MADE CONTINUOUSLY NAVIGABLE BY A SYSTEM OF LOCKS AND DAMS, OR OTHERWISE.

UNITED STATES ENGINEER OFFICE,
Mobile, Ala., February 9, 1887.

SIR: I have the honor of submitting the following report concerning the preliminary examination of the "Noxubee River, Mississippi, to ascertain whether it can be made continuously navigable by a system of locks and dams," provided for by river and harbor act, August 5, 1886.

A careful examination of this river was made from its mouth up to Macon, Miss., in November and December, 1879, report of which is contained in Annual Report of Chief of Engineers for 1880, Part II, from which it appears that such an improvement as was warranted by the present commerce, or what would be probably developed in the near future, could be made at an estimated cost of about $65,000, with $3,000 per annum afterward for preserving improvement.

The improvement suggested was to remove snags, logs, and overhanging trees, so as to give a good high-water channel. The greater portion of the work has already been completed.

Some use has already been made of the river by steamboats.

The only other system of improvement is by locks and dams, and, in my opinion, the river is not worthy of improvement in that way on account of the great cost and the comparatively small amount of commerce to be benefited.

The fall in the river is approximately 47 feet. The low-water discharge is very small.

The river in its upper portion has an average width of only 60 feet, contracted in places to less than 40 feet width for low-water channel.

The only gain would be the extension of the boating stage on the river three or four months.

The only commerce to be benefited by an improvement of the river would be the shipment of less than 20,000 bales of cotton, and about the same value of return supplies, now moved on the Mobile and Ohio Railroad, the saving of freight on which has been estimated at about $20,000 per annum.

Very respectfully, your obedient servant,

A. N. DAMRELL,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF ALLIGATOR RIVER, NORTH CAROLINA

UNITED STATES ENGINEER OFFICE,
Norfolk, Va., November 24, 1886.

GENERAL: I have the honor to render the following report on my personal preliminary examination of Alligator River, North Carolina, made between the 16th and 20th instant, pursuant to the provisions of section 6 of the river and harbor act of August 5 last, and your instructions of the 28th ultimo.

Capt. James Mercur, Corps of Engineers, now professor of engineering at West Point, examined this river four years ago. His full report thereon is inserted herein immediately below:

UNITED STATES ENGINEER OFFICE,
Norfolk, Va., January 27, 1883.

GENERAL: I have the honor to submit the following report of a preliminary examination of Alligator River, North Carolina, made between November 3 and 9, 1882, in accordance with directions contained in your letters of August 11 and September 27, 1882.

Through the courtesy of Mr. Marshall Parks, president of the Albemarle and Chesapeake Canal Company, who was about to visit Fairfield, I was invited to accompany him upon the canal company's steamboat, which gave me an opportunity for a much better examination than would have been otherwise practicable.

Alligator River rises in the swamps of Hyde County, North Carolina, and empties into Albemarle Sound near its eastern extremity. Its total length is probably 50 miles. It is navigable by vessels drawing not more than 8 feet for 20 miles from its mouth, and for those drawing not more than 6 feet up to the mouth of the Fairfield Canal, about 18 miles further.

The land throughout its entire length is low and swampy, there being no towns and only four or five landings upon the river. From the head of navigation the Fairfield Canal Company have a canal about 5 miles long, 30 feet wide, and 5 feet deep, with out-locks running to Fairfield, the only town whose commerce is carried over the river.

Fairfield is situated on the banks of Mattamuskeet Lake, and is a town of 225 voters, or probably 1,200 inhabitants. The farming lands around the lake are very good, and produce large crops of corn, rice, sweet and Irish potatoes, and other vegetables.

About 100,000 to 125,000 bushels of corn and a small quantity of rice are exported annually, and general merchandise is imported to supply the town and surrounding country, there being enough business carried on to support twelve country stores. One steamboat runs regularly from Fairfield to Elizabeth City, N. C., making two round trips a week, and touching at the other landings on the river, connecting at Elizabeth City with the Elizabeth City and Norfolk Railroad.

The Fairfield Canal Company is an incorporated company, and collects tolls upon boats and freights passing over the canal.

The lower 20 miles of Alligator River is straight and broad, with good depth of water, but has a wreck and one or two bad snags near the channel. The next 8 miles, proceeding upwards, *i. e.*, between Newport News and Cherry Ridge, is crooked, but of good width and depth, but also contains a few snags near the channel. From Cherry Ridge to the mouth of the Fairfield Canal, about 10 miles, the river becomes very narrow, and its crooks and bends are hardly to be described. Its depth, however, in the narrow and crooked part is great, seldom less than 18 feet close to the apparent banks.

The actual banks of the narrow part of the river are not determinable by any ordinary means, as the visible margin of the river is made up of a dense growth of canes and grass, with some small trees, which, while in some parts they may send their roots down to solid ground, in others are afloat. This is shown by points being cut off by the steamers and floating down the river as islands until they lodge in some other place, and the roots make them fast again in a new locality. One of these islands, carrying a small cypress tree about 10 feet high, together with grass and canes, was floating in the river when I passed up, and had floated down-stream about one-fourth of a mile before my return, the motion being principally due to wind, as there is a very slight current in the river.

The removal of the snags and wreck in the lower river and straightening the upper river are the only improvements which are considered necessary by those interested in the river.

The removal of the wreck and snags would not be difficult or expensive, but the straightening of the upper river would be probably quite a costly operation. No estimate of the cost of this work could be made without a full survey, which would, owing to the character of the river and banks, cost about $1,500.

The pilots say there are ninety-eight crooks in one direction and ninety-nine in the other; around many of these it is necessary to push a steamboat 75 to 100 feet long with poles. One of these bends was cut off several years ago by sawing through the canes, roots, etc., and floating the piece cut out, which was about 40 by 60 feet, into the old channel. This cut remains open, while the old channel is closed by material which has floated in and grown fast.

The navigation of this part of the river is tedious and difficult, owing to these short bends, but is entirely safe, as the river is deep, free from snags and stumps, and the banks are of such a character that a boat can not get ashore.

Should the upper river be straightened it would shorten the time from Fairfield to Elizabeth City or other ports about two hours for the boats which can now run on the river, and would admit larger boats to reach Fairfield. This would be a convenience to the inhabitants of Hyde County, and would invite competition and reduce freights, and would probably encourage somewhat greater variety and increase in production in the country. The amount of this probable increase, however, is not such as, in my judgment, would cause this river to be considered worthy of improvement and the work a public necessity.

Very respectfully, your obedient servant,

JAS. MERCUR,
Captain of Engineers.

Brig. Gen. H. G. WRIGHT,
Chief of Engineers, U. S. A.

Captain Mercur's description of the river is of course correct. My object in going over it was to note any changes that might have occurred since.

At Fairfield I found among the records of the Fairfield Canal and Turnpike Company a tracing of a Coast Survey map of a reconnaissance of the upper part of the river made in 1876. Mr. S. B. Sadler, collector of said canal, very kindly loaned this to me. I have caused the accompanying map to be traced therefrom, making the curves in black instead of in colors, in case it be published, and noting the miles thereon. I also transmit herewith a Coast Survey map of the balance of the river. These two comprise the whole river, 42 miles in length, below the Fairfield Canal. (I shall call this the canal hereafter in referring to it herein.) Above the mouth of the canal nothing is desired on the river, it being very insignificant so far as navigation is concerned.

I passed over the river on the mail steamer *Martha E. Dickerman*, which is operated by the Norfolk Southern Railroad Company.

* * * * * * *

She makes two round trips per week to Elizabeth City, N. C., carrying the mails. The only other vessel that runs to Fairfield is the schooner *Lena*, that can carry 2,000 bushels of corn.

Fairfield is a hamlet not far from Mattamuskeet Lake. It is at the head of the canal and about 4 miles from the river. Between the canal and Kilkenny, about 10 miles, there are no landings on the river, save one at a ditch 3 miles below, where there is a small house for the reception of corn brought over the ditch in pole-boats. The improvement of this particular portion is about all that is asked for by those interested in the river.

The depth is ample, the banks bold and yielding, in a measure. There is no leaning timber, no snags to speak of, only a few logs, and were the stream straight the width would be sufficient. All that is desired is to make cut-offs through material the greater part, if not all, of which may well be termed quasi-rafts of reeds, etc., grown together. It is a question how well a dredge-bank would stand. The river is in much better condition than the canal. The latter and the upper part of the former are mere drains, having side drains leading into them. The rise and fall of the water therein is due mostly to the winds, and of course to rain. It is not known that any levels have ever been run; but it is quite probable that cut-offs would draw down the canal, which is now too shallow, and it is understood that owing to quicksand it would be expensive to deepen it. It was noticed that a dredge had been there at work lately. It would not injure navigation in the river, however, to draw down its level a little.

The canal company is said to have paid several small dividends since the war, but the most of its revenue is spent on the canal. Its toll on corn is 2 cents a bushel.

It is a fact that this part of the country has been largly reclaimed and improved during the past few years. Last year Mattamuskeet Lake, 20 miles long, 6 miles wide, and 5 feet deep, was drawn down 3 feet by digging a drainage canal, 3½ miles in length, to Wysocking Bay, an arm of Pamlico Sound, and now another important canal is approaching completion, as stated by Colonel Carter.

Attention is invited to the accompanying communications of Col. William S. Carter, president Fairfield Canal and Turnpike Company, and M. K. King, esq., general manager Norfolk Southern Railroad Company, dated the 16th and 20th ultimo, respectively, * * * also to a statement of the Fairfield Canal traffic for the last four fiscal years, furnished by Mr. Sadler.

It is thought that the "present and prospective demands of commerce" are fully met now, so far as the river is concerned. When the owners of the canal, the objective point, shall have made the navigation thereof as good as, or better, than that on the river approach thereto, then it will be time for the Government to improve the latter, provided the trade seeking it shall justify any improvement.

In view of the foregoing I have to report that Alligator River, North Carolina, is not "worthy of improvement."

Very respectfully, your obedient servant,

F. A. HINMAN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.
(Through Lieut. Col. Wm. P. Craighill,
Corps of Engineers, U. S. A.)

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., November 26, 1886.

Respectfully forwarded to the Chief of Engineers.

I have no personal knowledge of this stream, but from the evidence before me conclude that under existing circumstances the improvement of Alligator River should not be undertaken by the United States at this time.

WM. P. CRAIGHILL,
Lieut. Col. of Engineers.

LETTER OF MR. M. K. KING, GENERAL MANAGER NORFOLK SOUTHERN RAILROAD COMPANY.

NORFOLK SOUTHERN RAILROAD COMPANY,
GENERAL MANAGER'S OFFICE,
Norfolk, Va., October 20, 1886.

DEAR SIR: Replying to your request for information about the Alligator River, I inclose a statement of the traffic through the Fairfield Canal for the year ending August 31 last, and of the president of the canal company, Col. William S. Carter, descriptive of the locality in the vicinity of the head of the river; also of the traffic in and out of the Alligator River carried by this company's steamer running between Elizabeth City and Fairfield.

The views expressed by Colonel Carter may be received with entire confidence in the representation he makes about the Alligator River. He is qualified by the resi-

dence of a life-time in Hyde County and by the observation of travel to speak intelligently upon the subject about which he writes.

I concur with him in believing that the Government would be justified in expending up to $10,000 in the improvement of the Alligator River. It is a mail-route of increasing importance, and it is the outlet for the principal part of several counties which will produce very largely of natural and cultivated products.

Very truly yours,

M. K. KING,
General Manager.

Capt. F. A. HINMAN,
Corps of Engineers, U. S. A.

LETTER OF COLONEL WILLIAM S. CARTER, PRESIDENT FAIRFIELD CANAL AND TURNPIKE COMPANY.

OFFICE OF THE FAIRFIELD CANAL AND TURNPIKE COMPANY,
Fairfield, N. C., October 16, 1886.

DEAR SIR: Yours of the 12th instant, covering report of Captain Mercur, came to hand by last steamer. I send you a statement showing the trade of this canal the past year, and while this statement is correct, it does not show, or really convey, a correct idea of the amount of work we usually do. Owing to excessive rains last year the crops were shortened more than one-half. The present year we shall ship from 100,000 to 125,000 bushels corn, between 15,000 and 20,000 bushels rice, about 12,000 bushels oats, and other things in proportion. This is no guess-work, as the crops are matured and a part of them housed. The people having something to trade with, the importation of merchandise will be nearly, if not quite, doubled. The registered vote of Fairfield is 261, showing a population of about 1,500. The depth of water in the Fairfield Canal at mean tide by actual measurement is a little over 7 feet, and is safely navigable for vessels drawing 6½ feet. I do not know to what extent Captain Mercur proposed to straighten Alligator River, but in my opinion $3,000 judiciously and economically expended would make all the improvement that would be required on the upper part, *i. e.*, Cherry Bridge Landing to Fairfield Canal.

The State, with its convict force, is about completing a large canal from Alligator Lake, in Tyrrell County, to Rutman's Creek, in Hyde County. This canal will cut off the press of water from all this section, which has heretofore destroyed the crop, and will, it is thought, render thousands of acres of land valuable that heretofore have been regarded as worthless.

With the highest respect for Captain Mercur and his superior skill in these matters, I think that our people think that the Government can well afford to spend the small amount necessary to the improvement of this river.

Very respectfully, yours,

WM. S. CARTER,
President.

M. K. KING,
General Manager.

Statement of grain, merchandise, passengers, etc., carried over the Fairfield Canal from September 1, 1885, *to September* 1, 1886.

Articles.		Quantity.	Articles.		Quantity.
Bread	barrels	80	Lumber	feet	90,206
Beef and pork	do	88	Bricks		21,400
Flour	do	456	Juniper posts		537
Molasses	do	26	Buggies and horses		28
Cider and whisky	do	27	Cattle		52
Sugar	do	53	Sheep		32
Oil	do	41	Potatoes	barrels	210
Lime and cement	do	68	Hay	bales	18
Coffee	bags	62	Corn	bushels	44,049
Salt	do	81	Pease	do	1,538
Hats and shoes	boxes	82	Oats	do	11,180
Soap	do	74	Rice	do	2,085
Tobacco	do	121	Wheat	do	132
Dry goods	cubic feet	659	Eggs	dozen	5,010
Nails	kegs	57	Chickens		2,243
Soda	crates	67	Small boxes		1,402
Coal	tons	46	Passengers		365

STATEMENT OF PACKAGES, ETC., TRANSPORTED OVER NORFOLK SOUTHERN RAILROAD FROM ALLIGATOR RIVER FROM SEPTEMBER 1, 1885, TO SEPTEMBER 1, 1886.

NORFOLK SOUTHERN RAILROAD COMPANY,
Norfolk, Va., October 19, 1886.

Articles.	Quantity.	Articles.	Quantity.
Corn ..... bushels..	29,705	Poultry ..... number..	395
Wheat ..... do....	84	Eggs ..... packages..	817
Oats ..... do....	4,002	Fresh fish ..... boxes..	201
Pease ..... do....	260	Salt fish ..... do....	108
Truck ..... packages..	1,544	Merchandise ..... packages..	1,058
Cattle ..... number..	229	Rice ..... bushels..	8,030
Hogs ..... do....	60	Cotton ..... bales..	177
Sheep ..... do....	111	Shingles ..... number..	17,800

Tonnage for same period:
North bound 2,807,729
South bound 1,072,904
Passengers carried to and from all points on Alligator River during the year ending December 31, 1885 842

Traffic of the Fairfield Canal for the fiscal years ending October 31, 1883, 1884, 1885, *and* 1886.

[Furnished by Mr. S. B. Sadler, collector of canal.]

INWARD BOUND.

Articles.	1883.	1884.	1885.	1886.	Total.
Horses ..... number..	22	30	*43	†11	106
Bread ..... barrels..	59	91	‡120	‡66	336
Potatoes ..... do....	30	.....	.....	.....	30
Beef and pork ..... do....	91	79	90	98	358
Flour ..... do....	471	473	572	472	1,988
Sirup ..... do....	34	29	27	21	111
Cider and spirits ..... do....	179	31	23	23	256
Sugar ..... do....	61	60	54	56	231
Coffee ..... bags..	53	69	74	61	257
Hats and shoes ..... boxes..	73	87	97	67	324
Soap ..... do....	81	64	93	70	308
Furniture ..... do....	32	10	5	9	56
Small boxes and packages ..... number..	1,210	1,094	1,345	1,097	4,746
Tobacco ..... boxes..	92	97	137	111	437
Dry goods ..... do....	718	419	880	675	2,692
Hardware ..... do....	43	110	81	30	264
Nails ..... kegs..	66	77	68	67	278
Lime ..... barrels..	97	69	104	61	331
Engine and separator ..... pounds..	5,060	2,440	.....	§2	7,500
Bricks ..... number..	45,000	15,000	30,950	22,800	113,750
Salt ..... bags..	141	81	139	99	460
Doors and windows ..... packages..	75	.....	65	.....	140
Oil ..... barrels..	50	38	44	39	171
Coal ..... tons..	100	52	50	48	250
Buggies and wagons ..... number..	10	39	.....	.....	49
Lumber ..... feet..	100,761	46,150	78,752	98,000	323,563
Posts ..... number..	250	.....	924	509	1,683
Passengers ..... do....	178	218	222	158	776

*Cattle, horses, and buggies.
‡Bread and potatoes.
†Horses and buggies.
§Number.

Traffic of the Fairfield Canal for the fiscal years ending October 31, 1883–'86—Continued.

OUTWARD BOUND.

Articles.	1883.	1884.	1885.	1886.	Total.
Corn.....bushels..	63,000	30,000	51,000	40,000	184,000
Oats.....do....	3,900	5,000	12,050	10,000	30,950
Rice.....do....	3,400	6,000	5,000	2,000	16,400
Eggs.....dozens..	3,620	8,000	5,500	6,000	23,120
Pease.....bushels..	375	288	2,462	2,000	5,125
Apples.....barrels..	*157	*214	280	150	801
Cattle.....number..	76	88	66	50	280
Wheat.....bushels..	806	619	111	50	1,586
Poultry.....number..	972	3,000	1,800	2,500	8,272
Horses.....do....	13	19	12	16	60
Passengers.....do....	237	204	221	175	837

* Apples and potatoes.

PRELIMINARY EXAMINATION OF YADKIN RIVER, FROM SOUTH CAROLINA LINE TO THE NARROWS, NORTH CAROLINA.

UNITED STATES ENGINEER OFFICE,
Wilmington, N. C., February 4, 1887.

GENERAL: I have the honor to submit herewith the following preliminary report upon the examination of the Yadkin River, North Carolina, from the South Carolina line to the Narrows, assigned to me by river and harbor act of August 5, 1886, and letters from your office dated September 27, Ooctober 4, and October 28, 1886.

This river has already once been examined by the Government in 1878, under the more correct title of Pee Dee River, from Cheraw to the Uwharie River. The results of this examination, as reported by Mr. W. B. Page and Capt. C. B. Phillips, are to be found in full in pages 723 to 726, Part I, Annual Report of Chief of Engineers, United States Army, for 1879.

The following brief description is condensed from this report and from other information received from persons living along the river:

The Narrows of the Yadkin River are situated at its lower end, at a point about 40 miles northeast of Charlotte.

This river above the Narrows is a river of about 200 miles length and 4,320 square miles of drainage area. It is reported as being over 1,000 feet wide just above the Narrows; as from 20 to 40 feet wide, and as dropping from 40 to 50 feet in its 2-mile passage through the Narrows; as expanding again to 1,000 feet width at the lower end of the Narrows; as having at this point at low water an outflow of 2,500 cubic feet of water per second, and as rising in its 1,000 feet width to 12 feet height during freshets. From the Narrows it flows in a general southerly direction 71 miles before it reaches Cheraw, the present head of steam navigation, during the high-water season. It changes its name from that of Yadkin to that of Great Pee Dee at the entrance of Uwharie River, about 4 miles below the Narrows, and it crosses the State line about 7 miles above Cheraw. At Cheraw it is reported as being 350 feet wide, as having at low water a discharge of 7,000 cubic feet of water per second, and as rising in its 350 feet width to 34 feet height during freshets. Between the Narrows and the State line, a distance of about 64 miles, it passes through or along the counties of Stanley, Montgomery, Anson, and Richmond. The following table shows the height of various important points in the river and their distance from the Atlantic Ocean, and also the height and length of the most important falls and rapids.

Falls, rapids, and railroad crossings of the Yadkin (and Great Pee Dee) River, North Carolina, below the Narrows.

Name.	Distance from Atlantic Ocean.	Height above sea level.	Amount and rapidity of fall.
	Miles.	*Feet.*	
Narrows	321	420	40 feet in 2 miles; rapids and rocks.
Uwharie River	317	390	Three shoals.
Shankle's Mill	308	335	Do.
Rocky River	297	270	Six shoals.
Little River	286	205	
Grassy Island Rapids	281	.....	30 feet in 3 miles.
Bluett Falls	277	.....	12 feet in 1 mile.
Carolina Central Railroad	270	110	
State Line	257	73	
Cheraw	250	65	Head of high water navigation in 1887.

From this table it will be seen that from the State line 13 miles, up to the Carolina and Central Railroad, the river surface has a rise of 37 feet and a tolerably uniform slope of about 2.8 feet to the mile. In this interval the river-bed is full of rocks which would have to be blasted away. The expense of thus opening a channel 40 feet wide and 4 feet deep at low water, from the Carolina Central Railroad to Camden, was estimated by Mr. Page in 1878 at $162,000, or about $8,000 per mile.

From this table it will further be seen that from the Carolina Central Railroad 51 miles, up to the Narrows, the river surface has a rise of about 310 feet and a tolerably uniform slope of over 5.5 feet per mile in addition to two special rapids (Bluett's Falls and Grassy Island Shoals) of 4 miles total length and 10 feet rise per mile. A slope of 5.5 per mile is greater than can be safely ascended by shallow-draught boats unless aided by tow chains; and even then such an ascent becomes too expensive for ordinary use; so that an up-stream steam navigation would require the construction of about twelve dams, 150 feet height of locks, and 7 miles of canal. In my opinion, bearing in mind the nature of the river and its prospective commerce, these locks and dams should be of masonry, and the locks should be not less than 120 feet long, 24 feet wide, 4 feet deep on the sill, and should be of about 10 to 12 feet lift. At points where dams would be necessary the river is of a width varying from 500 to 1,000 feet, averaging perhaps 650 feet.

Estimating the cost of dams at $80,000 each, that of locks at $40,000 each, and that of the canal at $14,000 per mile, the total cost of such locks, dams, and canals would reach $1,650,000 for the 51 miles above the Carolina Central Railroad, or about $30,000 per mile. The service of these locks would cost afterwards at least $30,000 per year.

Above the State line the four counties bordering on the river, and which would be benefited by the river improvements, have (according to the 1880 census reports) 56,118 population; 6,652 farms of 275,524 acres, owning $926,949 live stock, and producing an annual agricultural crop of $2,792,515. In these four counties, and lying within 10 miles of the river, is 1,000 square miles (640,000 acres), mostly of good land, half of which might easily be cultivated, and from which might readily be obtained annually $9,600,000 of farm crops, in addition to unlimited quantities of lumber, stone, and ores. This region produces large quantities of cotton (about 50,000 per year), grain, tobacco, naval stores, and timber, and it posesses large and fine quarries of building stone and of gold ore. It is at present in great need of better transportation. The farmers of this section have to haul their goods to market such a dis-

tance (generally over 20 miles), that their profits are reduced in many cases to almost nothing.

In my opinion the steep descent of the river and its large extent of rocky bottom render any extended high-water navigation upward, and any extended low-water navigation either upward or downward, impracticable from the Narrows to the Carolina Central Railroad Bridge except by the aid of locks and dams, and render any low-water navigation impracticable from the Carolina Central Railroad to the present head of navigation except by the extensive removal of rock from below low-water level; and the cost of such improved navigation would be too great in comparison with the advantages to be derived therefrom until the mineral resources of the river basin are more fully developed than at present. On the other hand, it does seem to me as if it ought to be possible to improve the down-stream navigation of this river for rafts and barges at mean and high-water stages from the Narrows to the Carolina Central Railroad, and both up and down-stream navigation for shallow-draught steamers at mean and high-water stages, from the Carolina Central Railroad to Cheraw, the present head of navigation, at such stages of water. Such an examination will necessarily last through the greater part of a year, and will prevent me from making to the present Congress any final report upon the examination of the river.

Very respectfully, your obedient servant,

W. H. BIXBY,
Captain of Engineers.

CHIEF OF ENGINEERS, U. S. A.
(Through Supervising Engineer Col. W. P. Craighill.)

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., February 9, 1887.

Respectfully forwarded to the Chief of Engineers. Approved.

WM. P. CRIGHILL,
Colonel of Engineers.

EXAMINATION OF YADKIN RIVER, FROM SOUTH CAROLINA LINE TO THE NARROWS, NORTH CAROLINA.

WILMINGTON, N. C., *December* 15, 1887.

SIR: I have the honor to submit herewith a final report upon the examination of the Yadkin River, North Carolina, from the South Carolina line to the Narrows, assigned to me by river and harbor act of August 5, 1886, and letters from your office dated September 27, October 4, and October 28, 1886.

Upon the 4th February, 1887, I submitted a preliminary report upon this examination, in which I stated the general features of the river, the estimated cost of its improvement, and the necessities of neighboring communities, and my opinion as to the probable advantages of the improvement of the river, as based upon previous reports and upon information obtained from persons living along the river.

Since the date of this preliminary report I have examined the river in person, in a small row-boat, over the entire length above specified, and at a time when the water was at nearly its lowest stage. The middle portion of this river, from the Grassy Island Shoals upward 16 miles, was found to be comparatively level, and in itself could be easily made

navigable at low water for boats drawing 4 feet; but there would be no way of connecting this navigation to other navigable parts of the river below, or even to nearest railroad, except at a cost to-day out of proportion to the resulting benefits. The rest of this river, the general features of the whole river, the cost of its improvement, and the statistics of commerce were found to be practically as already described in the preliminary report, to which you are referred for fuller details.

In my opinion this river-basin is one of considerable water-power and of great agricultural wealth, but at the same time one which is at present best adapted to development by the construction of a railroad up its valley, instead of by the improvement of its water-ways. Moreover, the people along the river appear anxious to have an open passage cut through the existing fish-dams, more to allow fish to ascend the river than to facilitate the river commerce.

Since making the above-described examination, I have visited other rivers of similar nature, upon which there already exists a more or less successful pole-boat navigation.

As a result of all these examinations, I am now of the opinion that the steep descent of the Yadkin River, its comparatively small volume of water at ordinary stages, and its large extent of rocky bottom render any extended navigation of this river impracticable except by the aid of locks and dams and the extensive removal of rocks between these dams; that the cost of any such improved navigation (even for rafts and barges) is here altogether too great (see preliminary report), in comparison with the advantages to be derived therefrom, until the mineral resources of the river-basin are much more fully developed than at present; and that under these circumstances, this river, within the limits of the prescribed examination, is not *to-day* worthy of improvement by the General Government.

Very respectfully, your obedient servant,

WM. H. BIXBY,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF CATAWBA RIVER, NORTH CAROLINA.

UNITED STATES ENGINEER OFFICE,
Wilmington, N. C., February 4, 1887.

GENERAL: I have the honor to submit herewith the following preliminary report upon the examination of the Catawba River, North Carolina, provided for by river and harbor act of August 5, 1886, and assigned to me by letters from your office, dated September 27, 1886, and October 28, 1886.

This river has been the subject of several examinations and surveys, made from time to time since 1820, by both the State of North Carolina and the United States. In 1824, Hamilton Fulton, an excellent civil engineer, made a survey of the river from Moore's Shoals, about 13 miles below Morganton, to the State line, a distance of about 92 miles. His survey covers almost all that portion of the river which can possibly be used for navigation. His full report is on file at the State capitol of North Carolina; and parts of it are given in pages 368 to 371, Part I, Annual Report of Chief of Engineers, United States Army, for 1876. In 1875 Mr. S. T. Abert, United States civil engineer, made an examination of this river from Old Fort to the State line, a distance of about 150 miles. *His report in full* is given in pages 367 to 376, Part

I, Annual Report of Chief of Engineers, United States Army, for 1876. In 1879 Mr. J. M. Wolbrecht, assistant engineer under Capt. C. B. Phillips, Corps of Engineers, made an examination of this river and its continuations, from Old Fort to the ocean, a distance of about 500 miles. Their reports in full are given in pages 911 to 916, Part I, Annual Report of Chief of Engineers, United States Army, for 1880. These three reports, together with maps and reports published by the State boards of agriculture of North and South Carolina, have been consulted in condensing the following brief description of this river.

The Catawba River is a river of about 207 miles length and 4,280 square miles of drainage basin, of which three-fourths lies in North Carolina. It rises in the Blue Ridge Mountains and in McDowell County, North Carolina, at a point about 16 miles east of Asheville, flows in a general easterly direction about 100 miles, and then flows in a general southerly direction another 100 miles through or along Burke, Caldwell, Alexander, Catawba, Iredell, Lincoln, Mecklenburg, and Gaston counties, and ending at a point about 20 miles north of Camden. The Catawba River is continued by the Wateree River, which flows in a general southerly course about 84 miles, until it combines with the Congaree River to form the Santee. The Santee River continues in a general southeasterly direction about 184 miles further, and empties into the Atlantic Ocean about 15 miles south of Georgetown, S. C. Steamers at present ascend the Santee and Wateree Rivers as far as Camden, but can never expect to reach the Catawba River except by the aid of locks and dams. The following table shows the heights of various important points on the river and their distances from the ocean, and also the height and length of the most important falls and rapids above the present head of navigation:

Falls, rapids, and railroad crossings of the Catawba River, North Carolina, and of its continuation into South Carolina.

Name.	Distance from the Atlantic Ocean.	Height above the sea-level.	Amount and rapidity of falls.
	Miles.	*Feet.*	
Headwaters	475	2,400	1,000 feet in 12 miles.
Old Fort	463	1,400	390 feet in 50 miles.
Morganton	413	1,010	102 feet in 10 miles.
Morris Shoal	403	908	
Chester and Lenoir Railroad	398	884	
Horseford Shoals	396	.....	31 feet in 3 miles.
Great Falls	386	.....	15 feet in 1 mile.
Lookout Shoals	376	.....	56 feet in 4 miles.
Western North Carolina Railroad	370	730	
Buffalo Shoals	367	.....	12 feet in 1 mile.
Platt Island Shoals	363	.....	40 feet in 4 miles.
Beattie's Ford Shoals	347	.....	14 feet in 2 miles.
Cowan's Ford Shoals	341	.....	25 feet in 4 miles.
Mount Island Shoals	336	.....	40 feet in 3 miles.
Carolina Central Railroad	333	522	
Tuckaseegee Shoals	332	.....	11 feet in 1 mile.
Atlanta and Charlotte Railroad	328	508	
Ross Falls	324	.....	8 feet in 1 mile.
North Carolina and South Carolina State line.	323	485	State line.
Charlotte, Columbia and Augusta Railroad	313	.....	
Landsford's Shoals	293	.....	29 feet in 2 miles.
Cheraw and Chester Railroad	288	.....	
Great Falls (Catawba)	282	.....	178 feet in 8 miles (of which 50 feet in ¼ mile).
Canal to Rocky Mount	to 274	.....	
Head of Wateree River	268	160	Name of river changes to Wateree.
Wateree Canal Shoals	256	.....	52 feet in 5 miles.
Camden	248	80	Head of navigation in 1887.
Head of Santee River	184	.....	
Atlantic Ocean	0	0	

From this table it will be seen that between Camden, the present head of navigation, and the State line there are three falls or rapids of 52, 178, and 29 feet height, and of 5, 8, and 2 miles length, respectively, making a total height of 259 feet in 15 miles, an average height of over 17 feet per mile, and causing in the river an average current of about 8 miles per hour. Obviously no steamer could ascend such a river without the use of canals and 259 feet height of locks, which do not yet exist, whose construction would cost at least $1,500,000, and whose services would cost afterwards at least $50,000 per year. From this same table it will also be seen that from the State line to Moore's Shoals there are at least ten falls or rapids of from 8 to 56 feet in height, with a total height of 252 feet, distributed over a length of 24 miles, an average of over 10 feet per mile, requiring for the upward passage of steamers the construction of about ten dams, 252 feet height of locks, and 24 miles of canal. In my opinion, bearing in mind the nature of the river and its prospective commerce, these locks and dams should be of masonry, and the locks should be not less than 120 feet long, 24 feet wide, 4 feet deep on the sill, and should be of about 10 to 12 feet lift. At points where dams would be necessary, the river is of a width varying from 400 to 1,000 feet, averaging, perhaps, 650 feet. Estimating the cost of dams at $80,000 each, that of locks at $40,000 each, and that of each mile of canal at $14,000 per mile, the total cost of such locks, dams, and canals would reach $2,200,000 for the 80 miles above the State line. The services of these twenty-six locks would cost afterwards at least $50,000 per year. The total cost, therefore, of opening the Catawba River for steamboat navigation from Moore's Shoals to the ocean would be about $3,700,000 for first construction, and at least $100,000 per year for annual service and maintenance. Above Moore's Shoals the river has a continual rise of at least 10 feet per mile, requiring for steam navigation at least one lock per mile, and making such navigation altogether too slow and too expensive. From this table we see also that between Moore's Shoals and the State line the river is crossed by four railroads; that above the Atlanta and Charlotte Railroad the river basin is already fairly well served by the railroad; and that above the Carolina Central Railroad and Western North Carolina Railroad the river could not be opened even 10 miles without requiring at least five locks at a cost of at least $300,000 for locks, dam, and canal, nor could it be opened for 30 miles without costing at least $600,000 for locks, dams, and canals; so that even local improvement for steam navigation appears to-day out of the question.

Above the State line the eight counties bordering on the river, and which would be benefited by the river improvement, have (according to the 1880 census reports) 128,568 population; 14,188 farms, covering 600,000 acres, owning $1,947,706 of live stock, and producing an annual agricultural crop of $4,622,819. In these eight counties, and lying within 10 miles of the river from Moore's Shoals to the State line, is 1,600 square miles (1,024,000 acres), mostly of good land, half of which might easily be cultivated, and from which might readily be obtained annually $15,000,000 of farm crops, in addition to unlimited amounts of lumber, building-stone, and iron ore.

The value of this river improvement must lie in the effect of competition upon the control of freights and the superior advantages of water transportation for heavy materials.

In my opinion the steep descent of the Catawba River to the State line, its numerous falls and rapids, and its large extent of rocky bottom, render any extended high-water navigation upward, and any ex-

tended low-water navigation either upward or downward, entirely impracticable, except by the aid of locks and dams; and the cost of such lock-and-dam navigation on this river is too great in comparison with the advantages to be derived therefrom until its mineral resources are more fully developed than at present. On the other hand, it does seem to me as if it ought to be possible to improve the down-stream navigation of this river for rafts and barges at mean and high-water stages; but I can give no opinion upon this subject until I have examined the river at extreme low-water stages as well as at mean or high-water stages. Such an examination will necessarily extend over the greater part of a year, and will prevent me from making to the present Congress any final report upon the examination of this river.

* * * * * * * *

Very respectfully, your obedient servant,

W. H. BIXBY,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.
(Through Supervising Engineer Col. Wm. P. Craighill.)

[First indorsement.]

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., February 9, 1887.

Respectfully forwarded to the Chief of Engineers. Approved.

WM. P. CRAIGHILL,
Colonel of Engineers.

EXAMINATION OF CATAWBA RIVER, NORTH CAROLINA.

UNITED STATES ENGINEER OFFICE,
Wilmington, N. C., December 15, 1887.

SIR: I have the honor to submit herewith a final report upon the examination of the Catawba River, North Carolina, assigned to me by river and harbor act of August 5, 1886, and by letters from your office dated September 27, 1886, and October 28, 1886.

Upon the 4th of February, 1887, I submitted a preliminary report upon this examination, in which I stated the general features of the river, the estimated cost of its improvement, and the necessities of neighboring communities, and my opinion as to the probable advantages of the improvement of the river, as based upon previous reports and upon information obtained from persons living along the river.

Since the date of this preliminary report I have examined the river in person in a small row-boat—over 44 miles of the best part of the river—from Buffalo Shoals down to the South Carolina line, this trip being taken at a time when the water was at nearly its lowest stage. The general features of the whole river, the cost of its improvement, and the statistics of commerce were found to be practically as already described in the preliminary report, to which you are referred for fuller details.

In my opinion, this river basin is one of considerable water-power and of great agricultural wealth, but at the same time one which is at present best adapted to a development by the construction of a railroad up its valley, instead of by the improvement of its water-way.

Since making the above-described examinations I have visited other rivers of similar nature, upon which there already exists a more or less successful pole-boat navigation.

As a result of all these examinations I am now of the opinion that the steep descent of the Catawba River, its comparatively small volume of water at ordinary stages, and its large extent of rocky bottom render any extended navigation of this river impracticable except by the aid of locks and dams and the extensive removal of rock between these dams; that the cost of any such improved navigation (even for rafts and barges) is here altogether too great (see preliminary report) in comparison with the advantages to be derived therefrom, until the mineral resources of the river basin are much more fully developed than at present, and that, under these circumstances, this river, within the limits of the prescribed examination, is not *to-day* worthy of improvement by the General Government.

Very respectfully, your obedient servant,

W. H. BIXBY,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF THE CHANNEL BACK OF BRIGANTINE BEACH, BETWEEN ABSECON AND BRIGANTINE INLETS, NEW JERSEY.

UNITED STATES ENGINEER OFFICE,
Philadelphia, Pa., December 21, 1886.

SIR: In compliance with instructions contained in your letter of October 28, 1886, I have the honor to submit the following report on a preliminary examination of the channel back of Brigantine Beach between Absecon and Brigantine inlets, New Jersey.

Brigantine Beach extends about 6 miles along the Atlantic coast, from Absecon Inlet to Brigantine Inlet. Just back of it is a thoroughfare, each end of which has a depth of over 6 feet, but 4 miles of it has a depth of less than 1 foot at mean low water. The shallow portion requiring dredging to give a 6-foot channel is indicated on the accompanying tracing by dotted red lines.

The object of the improvement, as far as I can learn, is to enable light, draught steamers to ply between Atlantic City and Brigantine Beach, so that visitors at the beach may have quick and reliable connection with the railroads at Atlantic City. This would be of great value in the development of Brigantine Beach.

A channel 6 feet deep at mean low water with a mean width of 75 feet would suffice for the purposes just mentioned. To obtain such a depth would probably require the excavation and removal of about 400,000 cubic yards (scow measurement) of sand and mud.

The cost of this work it is difficult to estimate, because there is no dredging plant in the vicinity. It certainly would not cost less than $100,000 if done by contract. There is nothing to indicate any possibility of keeping this channel open by tidal scour. On the contrary, it seems very probable that the channel will require frequent dredging in order to remove the sand that would be blown into it from the beach. Comparison of the Coast Survey chart with the present condition of the beach shows marked changes. The inlet across the beach about 1½ miles above Absecon Inlet, which is shown on the Coast Survey chart, has entirely disappeared, and the thoroughfare back of the beach has narrowed and for 4 miles is about bare at very low tides.

At present there is practically no commerce to be affected by this improvement, but if it were completed Brigantine Beach, 6 miles long,

would undoubtedly be developed as a summer resort and a corresponding amount of commerce would be developed.

There is another way of connecting Abseem and Brigantine inlets by following the natural channels by way of Eagle and Grassy bays instead of the shallow thoroughfare just back of Brigantine Beach. The former route would cost less than half as much as the latter, but it can scarcely be said to be the thoroughfare just back of Brigantine Beach; nor would its improvement answer the purposes for which I understand this examination was called for. Furthermore, this route by Eagle and Grassy bays forms a part of the more extensive plan of improving the thoroughfares connecting Cape May with Great Bay, upon which a separate report will be made.

In conclusion, for the reasons given, I do not consider this route worthy of improvement.

Very respectfully, your obedient servant,

HENRY M. ROBERT,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF CHANNEL BETWEEN JAMAICA BAY AND ROCKAWAY INLET, NEW YORK.

ENGINEER OFFICE, UNITED STATES ARMY,
New York, N. Y., December 31, 1886.

GENERAL: I have the honor to submit the following report upon the examination or survey of channel between Jamaica Bay and Rockaway Inlet, New York, ordered by act of Congress approved August 5, 1886:

As Rockaway Inlet is the channel by which Jamica Bay is connected with the Atlantic Ocean, inquiry was made of the member of Congress at whose request the examination or survey had been ordered as to the purpose of the survey; and I was placed in possession of a memorial and maps from which it was learned that the examination desired was from Jamaica Bay to Far Rockaway Bay or Inlet, with the view of determining the cost of opening an inner line of water communication for boats of light draught from the Great South Bay on the south side of Long Island to Jamaica Bay west of it by means of a cut through the narrow neck of land which separates these bays.

The memorial indicated briefly that by making such a cut between these bays, about half a mile long, 6 feet deep at mean low water, 20 feet wide at bottom and 140 feet wide at top, this inner line of communication, which would be about 45 miles long, might be opened with great advantage to the commerce of the Great South Bay, particularly the oyster industry, and with a reduction of loss of life and property amongst those engaged in it; its cost was supposed to be about $30,000.

It was supposed that by means of this cut the small oyster-boats which gather their cargoes in different parts of the Great South Bay and which are sometimes prevented for several days at a time from passing out of Fire Island Inlet and the inlets west of it by reason of rough weather, would pass into Jamaica Bay and so out through Rockaway Inlet, which is only about 10 miles east of the Narrows, at the entrance to New York Harbor.

The examination just made shows, however, that this is not the case; for though the cut as proposed were made it could not be reached except by the smallest boats, for there is a shoal in Jamaica Bay three-quar-

ters of a mile long on which the low-water depth is but 1 or 2 feet, while in the Great South Bay there is a shoal a mile long which is bare at low water, and both of these shoals must be crossed by vessels passing through the cut.

Still further to the eastward there are numerous other shoals in this latter bay, between which the channels are so shallow, narrow, and tortuous that they may be considered practically unnavigable, and they are absolutely so for vessels of the draught which the proposed cut could accommodate.

The length of cut which it would be necessary to make for this purpose, then, would be more than four times that which the memorial suggests, and the cost would be increased proportionately. But the actual cost of opening a navigable channel here would far exceed this, for it would be necessary to improve many parts of the channels now existing in the bay, and after they were improved it would require frequent appropriations to keep them open. The oyster industry of the Great South Bay is very large, being, according to a statement attributed in the memorial to Fish Commissioner Eugene Blackford, of New York, as follows:

Value of boats and shore property concerned in the oyster trade	$720,000
Annual oyster product, 715,000 bushels, at 90 cents per bushel	643,500

But between one-third and one-half of this product goes to New York by rail; another part goes to Boston and the East; and of the part which goes to New York by water, it seems to be the opinion of the oystermen that very little would go by the inner route were it opened, since it would be long, crooked, and troublesome for sailing vessels to get through, while the outside course is shorter and affords plenty of sea-room.

To determine the cost of opening such a route as this would require a survey extending from Patchogue, on the Great South Bay, to Jamaica Bay, a distance of about 45 miles.

There is no commercial interest which demands such a survey as this, and none which would profit by such an improvement were it made.

Under the requirements of the law I am compelled to say, therefore, that for the present no survey is necessary, and that the proposed improvement is not one which, in my opinion, is worthy of being made.

There is this to be said, however, in favor of the project:

The south shore of Long Island is rapidly filling up with large summer hotels and private residences, and the day is not distant when every foot of the shore lines of these large bays will be occupied and this region will become the great summer resort of the greater part of the citizens of New York who seek for sea air and yet do not wish to go too far from the city.

When this occurs the hundreds of thousands of people occupying the shores of these bays will need easy water transportation from one part to the other, and it will become necessary to make this cut, and to open connecting channels, so that small steamboats may pass by the inside passage from the most easterly part of the Great South Bay to Coney Island.

I transmit herewith some extracts from the report of Assistant Engineer Maurice Kingsley, who made the examination.

Very respectfully, your obedient servant,

WALTER MCFARLAND,
Lieut. Col. of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

EXTRACT FROM REPORT OF MR. MAURICE KINGSLEY, ASSISTANT ENGINEER.

ENGINEER OFFICE, UNITED STATES ARMY,
New York, N. Y., December 28, 1886.

COLONEL: In accordance with your verbal instructions, I made an examination on December 9 of a proposed water route between Jamaica Bay, Long Island, and Far Rockaway Bay, Long Island.

Judging from the memorial and maps furnished for my guidance, the object of the proposed improvement is to give a continuous water route through the bays on the south side of Long Island from the oyster district in Great South Bay, through South Oyster Bay, Hempstead Bay, and Far Rockaway Bay, to Jamaica Bay—a distance of about 45 miles—so as to allow of vessels drawing 5 or 6 feet of water to pass from the 6-foot curve in Great South Bay to the 6-foot curve in Jamaica Bay at all stages of tide, instead of, as now, being obliged to run out into the Atlantic and coast along outside the outer beach in heavy weather.

It is claimed by the memorial that in order to give this continuous 6-foot channel it is only necessary to make a cut half a mile long and 6 feet deep at mean low water through a neck of land which puts down southward from the village of Far Rockaway, Long Island, and connects the main-land of Long Island with Rockaway Beach, and practically separates Jamaica Bay from Far Rockaway Bay.

This neck of land is situated 15 miles from the Battery at New York, in a direct line southeast, and is about 25 miles from it by water, taking the shortest sailing course through Rockaway Inlet and Jamaica Bay.

From Coney Island eastward to the east end of Shinnecock Bay—a distance of about 85 miles—the south side of the main-land of Long Island is separated from the Atlantic Ocean by a narrow sand-beach, through which are various openings into large bays lying inside of it.

These openings, or inlets as they are called, change continually in depth and width in heavy and protracted storms.

* * * * * * *

In this distance of 85 miles there are only two certain inlets into the bays for navigable purposes: Rockaway Inlet, entering into Jamaica Bay 18 miles from New York, with a present depth of about 13 feet at low water; and Fire Island Inlet, entering into Great South Bay 50 miles from New York, with a present depth of about 14 feet. In addition to these there are the following inlets, but the depths of water in them are much less, and vary a great deal more than the two above named, viz.:

Hog Island Inlet, opening into Far Rockaway Bay 27 miles from New York.

East Rockaway Inlet, opening into Far Rockaway Bay 28 miles from New York.

New Inlet, opening into Hemstead Bay 35 miles from New York.

Jones's Inlet, opening into South Oyster Bay 35½ miles from New York.

These last two inlets are practically the same, being only separated by a sand-bar. Jones's Inlet is also the inlet into the western end of Great South Bay.

Zachs Inlet, opening into Great South Bay 37 miles from New York.

Gilgos Inlet, opening into Great South Bay 42 miles from New York.

Shinnecock Inlet, opening into Shinnecock Bay 95 miles from New York.

The above distances are given along the ordinary sailing courses which would be taken from the Battery at New York to the different inlets by the ordinary light-draught coasting vessels in fair winds, and are taken from Coast Survey chart of 1886, scale $\frac{1}{400,000}$.

* * * * * * *

From the information I have been able to gather, and from a personal examination of the proposed line of the cut and from existing charts, it appears:

1. The proposed cut of half a mile long would not connect the 6-foot curves in South Bay and Jamaica Bay. From the western end of the cut, in order to reach the 6-foot curve in Jamaica Bay, there is a distance of about three-quarters of a mile over which there is only from one-half to 1½ feet of water at mean low tide.

A mile or two east of the east end of the cut, in Far Rockaway Bay, is a shoal about a mile long, which is bare at low water.

East of this shoal to the 6-foot curve in Great South Bay is a winding, narrow channel, with depths of from 3 to 5 feet of water in it, which also has to pass the mouths of several of the inlets, which are continually changing, and have shifting bars inside them.

2. The bottom of the proposed cut is to be 20 feet wide, with slopes of 50 feet. There already exists a cut through this neck between the two bays from 30 to 50 feet wide at top and bottom, with a depth of from 4 to 10 feet at mean low water, which was excavated about fifteen years ago along the line of an old slough with picks and shovels. The depth obtained was about even with mean low water. This was subsequently scoured out by the currents, till there are, as before stated, from 4 to 10 feet depths in it at mean low water.

So that, as far as the cut itself is concerned, although it is a little crooked, there exists as good a one, if not better, than the one proposed.

But the existing cut can not be used on account of its being crossed by two very low bridges without draw spans in them, viz, the Rockway Beach Railroad Bridge and the county carriage and foot bridge leading from Far Rockaway Village to Rockaway Beach; were draws put in these two bridges, all the boats which can get over the shoals east and west of the proposed improvement can get through the present cut.

Without making a detailed survey of about 45 miles long, no estimate can be given of the cost of making a navigable channel 6 feet deep at mean low water from Great South Bay to Jamaica Bay.

The half-mile cut proposed in the memorial, and estimated to cost $30,000, would be the smallest item of expense, and the whole cost of the improvement would amount to hundreds of thousands instead of tens of thousands of dollars, and would besides require annual appropriations in order to maintain the depth once gained.

The flood tide in Jamaica Bay runs from one to two hours longer than in Far Rockaway Bay and Hog Island Bay, which creates a heavy current through the existing cut from west to east for the last two hours of the flood tide.

But as the tidal area of Jamaica Bay is much larger than that of Far Rockaway Bay there is not the corresponding strength of current from east to west on the ebb.

The scour through this cut has already deepened the channel 4 feet or over in the last fifteen years, and it has, I was informed, by the keeper of the life-saving station, cut through the outer beach at the east end of the proposed channel several times, which has necessitated building a bulkhead along the inner side of the outer beach. Increasing the width and depth of the existing cut would increase the scour and consequently the danger of cutting through the outer beach.

It is claimed by the memorial that the oyster interest would be the one benefited by the proposed improvement; and the value of this industry is stated to be, according to Mr. Eugene Blackford, Fish Commissioner, as follows, on the south shore of Long Island, east of the proposed improvement:

Value of boats engaged in the oyster business and value of shore property..	$720,000
Annual crop of oysters, 715,000 bushels, at 90 cents per bushel	643,500

But from what I have been able to learn this summer and fall, at various times, from Canarsie to Patchouge, from 25 per cent. to 50 per cent. of this amount of oysters is shipped by rail, varying in amount with the locality and the weather in winter, as the bays in which the oysters are grown freeze up for from two to three months during the winter.

At Patchouge, in the Blue Point district of Great South Bay, about 30 per cent. of oysters are shipped by rail out of a total of from 75,000 to 90,000 bushels, and it was there stated to me that about the same percentage was shipped by rail in the rest of the district; the total yield of this district being estimated in the memorial at 215,000 bushels.

Mr. Blackford's figures are undoubtedly more likely to be correct than any others, and, from what I have been able to learn, do not overestimate the yield.

But of this total yield part goes to New York by rail, part goes to Boston and other points east, and it seemed to be the opinion that most of that shipped to New York would go by the outside course any way, even if the proposed water route were made, as on the outside course the boats have so much more sea-room and would not have to beat in narrow channels.

* * * * * * *

None of the oystermen in Great South Bay seemed to know of this project at all, and the most favorable expression of opinion I could get from there was, "O! well, it might be a good thing sometimes, but a man would have to know his way well, as it would be pretty close work in those narrow channels."

The return freight of brick, coal, lime, and lumber spoken of in the memorial does not come from New York at all. The brick comes from New Jersey; coal from Perth Amboy and Philadelphia: lime from the Hudson River, and lumber from Maine or the south. It is carried in a larger class of vessels entirely.

* * * * * * *

SUMMARY.

1. A 6-foot channel between Great South Bay and Jamaica Bay, Long Island, could only be obtained at far larger cost than estimated in the memorial, and greater than the commerce likely to use it would warrant. The cost of maintaining it would be expensive.

2. It would be more a matter of benefit to real estate owners than to general commerce.

3. There exists a far better channel to day over the line of the proposed half-mile cut than there is across the shoals east and west of it, but which unfortunately can not be used on account of the two bridges.

* * * * * * *

Respectfully submitted.

MAURICE KINGSLEY,
Assistant Engineer.

Lieut. Col. WALTER MCFARLAND,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF THE EAST RIVER, WITH A VIEW TO THE REMOVAL OF A LEDGE OF ROCKS SITUATED BETWEEN 500 AND 600 FEET FROM THE FOOT OF TENTH AND ELEVENTH STREETS IN THE CITY OF NEW YORK.

ENGINEER OFFICE, UNITED STATES ARMY,
New York, N. Y., January 28, 1887.

GENERAL: I have the honor to submit the following report upon the preliminary examination of "the East River with a view to the removal of a ledge of rocks situated between 500 and 600 feet from the foot of Tenth and Eleventh streets in the City of New York," authorized by act of Congress approved August 5, 1886.

This reef is about 900 feet long and 600 feet wide between the 20-foot curves. Were it to be removed it would not be necessary to excavate it below the 20-foot curve, since the depths above and below it and between it and the New York shore do not much exceed 20 feet at mean low water.

The last published Coast-Survery chart of this part of the East River shows that to cut this rock down to 20 feet below mean low water would require the removal of about 80,000 cubic yards of material, which, at $10 per cubic yard, would cost about $800,000.

To cut it away to a depth of 15 feet would require the removal of about 30,000 cubic yards of rock, which, at the same rate, would cost $300,000.

The least depth of water over this reef or ledge is about 10 feet, and the distance of the crest from the foot of Tenth street, New York, is about 300 yards. From the crest of the reef to the Brooklyn side of the river the distance is about 500 yards, which is about the width of the river at the Brooklyn Bridge and at several other points. At Blackwell's Island both channels are narrower than this.

While therefore the rock is an obstruction, it is not so much of an obstruction that its removal is demanded by the general commerce of the river. It is chiefly troublesome to vessels seeking the ship-yards which lie abreast of it on the New York side, as they are in danger of touching upon it in taking up or leaving their berths at those yards when the winds and currents are unfavorable to them.

In compliance with the terms of the act of Congress requiring me to give my opinion as to whether the proposed improvement is a worthy one or not, I have to say that it is a worthy one, but the probable cost seems to be too great for the interests involved at present.

The Coast Survey chart is so much in detail that I do not think a survey here is necessary until the general survey of the reef or reefs extending from Blackwell's Island down to Seventh street, New York,

for which an estimate was furnished by General Newton, June 16 1883, shall be undertaken.

Very respectfully, your obedient servant,

WALTER MCFARLAND,
Lieut. Col. of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF WADDINGTON HARBOR, NEW YORK.

UNITED STATES ENGINEER OFFICE,
Burlington, Vt., November 24, 1886.

GENERAL: In compliance with your instructions in circular letters dated September 27 and October 28, 1886, and as required by section 6 of the river and harbor act of August 5, 1886, I have the honor to inclose a report by John C. Churchill, jr., assistant engineer, on a preliminary examination made by him of Waddington Harbor, New York, with a view to determining whether or not it is advisable to improve that harbor.

His report sets forth fully and particularly the reasons on which he bases the opinion that, at most, the only feature in which this harbor is regarded as worthy of improvement is that of dredging 6,000 cubic yards of mud, sawdust, etc., from between the foot of Ogden's Island and the ferry dock, where dredging had been done in 1875; but it has now become somewhat obstructed, in consequence of an accident in the dam above, which allowed a quantity of such material to pass below and find lodgment there.

I concur in the views expressed in Mr. Churchill's report, that it would not be advisable to undertake any general improvement of this harbor, the requirements of its commerce rendering such an outlay injudicious.

Very respectfully, your obedient servant,

M. B. ADAMS,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. JOHN C. CHURCHILL, JR., ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
Burlington, Vt., November 15, 1886.

MAJOR: I have the honor to submit herewith the following report of an examination of Waddington Harbor, New York, made under your instructions on the 2d and 3d of this month.

Waddington is situated on the St. Lawrence River, 18 miles below Ogdensburgh, and is a village of about 1,000 inhabitants. Ogdens Island is opposite the town, and extends about 2 miles above and 1 mile below it, and is separated from the American shore by Little River, a stream which is from one-eighth to a quarter of a mile wide. To the north of Ogdens Island is the Rapid Plat of the St. Lawrence River, around which a canal has been built by the Canadian government, which canal is used by vessels ascending the river.

The village was founded by the Ogdens family, who, early in the century, owned the island. They built a dam across Little River and so furnished water-power for the mills and manufacturing establishments which are situated upon and below the dam. They also built a bridge about 900 feet above the dam, which was originally partly of cribs and partly solid, having spaces through which water could pass or be shut off, according to the demand at the dam. There is now but one opening of 35 feet left in the bridge, and it is intended next spring to put in a draw-bridge here and so give communication from the upper part of Little River to the dam.

The commerce between Waddington and other ports is carried on almost exclusively by boats drawing no more than 7 feet of water. During the fiscal year ending June 30, 1886, no boat of more than 36 tons entered or cleared.

A steam freightboat makes regular trips during the season between Ogdensburgh and Waddington, and a steam ferryboat plies daily between Waddington and Morrisburg, Canada.

For convenience of this report Waddington Harbor may be divided as follows:

1. From the head of Ogdens Island to the dam.
2. From the foot of Ogdens Island to the ferry dock, which is about 1,000 feet below the dam.
3. From the ferry dock to the dam.

1. *From the head of Ogdens Island to the dam.*—In 1874 and 1875 a channel was dredged through the bar at the head of Ogdens Island and a depth of 10 to 12 feet made through it. From soundings taken in this channel I found a least depth of 12 feet, showing that it has retained the depth made.

From this bar there exists, and has for many years existed, a channel to the bridge from 300 to 600 feet wide and from 10 to 15 feet deep, making a continuous channel, amply deep for the present needs of commerce, from the St. Lawrence River to the bridge, which is the present limit of navigation in this direction.

From the bridge to the dam there is a channel with a least depth of 8 feet, which will accommodate all commerce likely to reach the dam.

2. *From the foot of Ogden's Island to the ferry dock.*—During the fall of 1874 and the summer of 1875 a channel was dredged from deep water below the ferry dock to that dock. From the foot of Ogden's Island to within 200 feet of the ferry dock I found the channel to be in good condition, having a least depth of 10 feet, but from the point above mentioned to the ferry dock, I found the channel filled from 2 to 3 feet with mud and sawdust. This material was deposited there last spring, when 160 feet of the south end of the dam gave way, the flood carrying mud and sawdust to this point. To rectify this will require the dredging of a channel 250 feet long and 200 feet wide to a depth of 10 feet, necessitating the removal of about 6,000 cubic yards (scow measurement) of soft material at a cost as follows:

Dredging 6,000 cubic yards mud and sawdust, at 25 cents per yard	$1,500
Ten per cent. for contingencies	150
	1,650

3. *From the ferry dock to the dam.*—In 1875 a channel was dredged from the ferry dock to the dock near the mills on the dam, making a least depth of 3½ feet, the depth being limited by rock. During the summer of 1881 work was commenced on this same channel, with a view to deepening it by excavating the rock. An area 160 feet long by 50 feet wide was broken up; but the loose rock was not removed, as the appropriation gave out. This work did not improve the depth of water in this channel, but still left it with a governing depth of 3½ feet.

There is also a channel next to the island up to dock line at the dam from 60 to 100 feet feet wide, with a depth of from 6 to 14 feet. This channel might be used in case boats drawing more than 3½ feet of water wish to approach the dam.

At the time of this examination there was no indication that either of these channels was used or had been, for some months at least.

At the dam there is a grist-mill and a furniture manufactory, which are running, and two saw-mills and a carding-mill, not running. These mills all run some part of the year, but have been doing very little this season on account of the break in the dam, mentioned before, and which was repaired only last month. It does not appear that any of these mills need further harbor facilities than they already have.

Many of the people of Waddington are very anxious that a lock should be built at the dam which would allow boats to pass it. A survey and estimate, with this object in view, was made under the direction of Col. John M. Wilson, in 1875, but the execution of the project was not recommended at that time. There is less need for such a lock now.

Waddington is a port of entry in the collection district of Oswegatchie. The nearest American light-house is at Ogdensburgh, and Fort Montgomery, 100 miles distant, is the nearest work of defense.

A comparison of the custom-house reports of the last fiscal year with those of 1882 and 1883 is made herewith:

	1882.	1883.	1885.
Revenue from customs	$12,638.87	$15,121 61	$7,836.76
Value of imports	$67,800.00	$73,562.00	$47.874.00
Value of exports	$9,000.00	(*)	$862.00
Number of vessels cleared	20	(*)	19
Number of vessels entered	20	(*)	23

* Not given.

Very respectfully,

JOHN C. CHURCHILL, Jr.,
Assistant Engineer.

Maj. M. B. ADAMS,
Corps of Engineers.

PRELIMINARY EXAMINATION OF PETER'S NECK BAY, NEW YORK.

UNITED STATES ENGINEER OFFICE,
New York, November 4, 1886.

GENERAL: I have the honor to submit the following report of a preliminary examination of Peter's Neck Bay, New York, made in pursuance of the river and harbor act approved August 5, 1886, and directed by letter from the Chief of Engineers, dated September 27, 1886.

DESCRIPTION.

Lieut. James C. Sanford, Corps of Engineers, who visited the locality in October, 1886, describes the bay as follows:

This is a land-locked bay (known on the United States Coast Survey chart as Long Beach Bay), indenting the south shore of the northeast fork of Long Island, 2 miles from Oyster Pond Point, the extremity of this fork of the island. Generally speaking, it is rectangular in form, being about 1 mile in length (east and west) by two-thirds of a mile in breadth (north and south). The entrance is at the southwest angle, and is from 600 to 700 feet in width. Inside the bay there is about 6 feet depth at low water, with no obstruction of importance, either to reaching the shores of the bay or to entering Narrow River, which flows into the northwest angle of the bay, and which is navigable for a few hundred feet above its mouth. The entrance to the bay, however, is obstructed by two sand-shoals lying off Peter's Neck Point and Brown's Point, which close the entrance on the north. The channel around these shoals is extremely narrow and tortuous and is crossed in several places by a strong tidal current flowing into and from the bay. In consequence of this, a sailing vessel can not enter unassisted. Mr. Hallock, who is at present the principal shipper in the bay, has built a small tug with which he assists vessels carrying his produce to enter; but even with this assistance they are often swept by the tide upon the shoals. The depth of water through the channel at the entrance is about 4 feet, and the mean rise and fall of tide about 2.5.

PRESENT COMMERCE.

This consists mainly in the shipment of farm products and the receipts of fertilizers. From information furnished by Mr. G. W. Hallock, who owns a wharf in the bay (the only one), near the mouth of Narrow River, it appears that the value of the shipments during the year 1886 up to October 12 was $14,310, and of the receipts (fertilizers) $3,790.

Mr. Hallock has also furnished the following record of vessels entering the bay since 1875:

Growth of commerce of Peter's Neck Bay.

Year.	Number of vessels entering.	Tonnage.	Year.	Number of vessels entering.	Tonnage.
1875	18	180	1882	33	1,200
1876	23	300	1883	56	2,230
1877	16	230	1884	61	2,450
1878	19	240	1885	54	2,450
1879	24	380	1886 (to October 12)	60	2,325
1880	15	435	Estimated total for 1886	75	3,325
1881	23	390			

PROSPECTIVE COMMERCE.

The principal proportion of the products of the farms surrounding the bay are now shipped by water from Orient Dock, and supplies of coal, etc., are also distributed from there. It is claimed that if the entrance to the bay were improved a large part of this business would be done from there, as it would save some cartage. The present value of the farm products which would be shipped from the bay in this case is stated by Mr. Hallock to be $60,000.

DESIRED IMPROVEMENT.

The improvement asked for consists in dredging a channel 100 feet wide and 5 feet deep at low water. Estimating from the Coast Survey chart of 1883, this would require the ultimate removal of about 100,000 cubic yards of sand, scow measurement, at a cost of about $20,000. There is every reason to believe that such a shallow channel in that locality would soon fill up, and that a permanent improvement would require the construction of dikes and periodical dredging. A smaller amount expended in dredging would doubtless facilitate the entrance of vessels to a considerable extent.

SUMMARY.

The only industry which it is claimed would be benefited is the farming district on Oyster Pond Peninsula, shown on the accompanying tracing.* This district is about 4 miles long and 1 mile wide. The produce is now shipped principally from the village of Orient, where there is a good harbor, and supplies for the district are also landed at Orient, which is the only town in the vicinity.

Peter's Neck Bay, or properly Long Beach Bay, possesses no advantages as a harbor over Orient except a saving of cartage.

There is no settlement on the bay, while at Orient there are stores, shops, and a post-office.

To make a cut at the entrance 100 feet wide and 5 feet deep at mean low water would cost about $20,000. Periodical dredging or dikes, or both, would be required for maintenance. A much smaller amount expended in dredging would facilitate the entrance and egress of vessels to a considerable extent.

*Omitted.

The present and prospective commerce does not appear to warrant the necessary expenditure for a permanent improvement, and I would therefore report that in my opinion the harbor is not worthy of improvement.

I inclose two letters* from Mr. G. W. Hallock, with statistics furnished by him. Also a tracing* from the Coast Survey chart of 1883, showing soundings at the entrance to the bay.

Very respectfully, your obedient servant,

D. C. HOUSTON,
Lieut. Col. of Engineers.

Brig. Gen. JAS. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF WOOD RIVER, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 14, 1887.

SIR: I have the honor to here submit a report of a preliminary examination of Wood River, Oregon. A report based on information obtained to that time was forwarded last February; the tenor of this report was that the river was not worthy of improvement. Since then further investigation and a personal examination have been made; and I have now to say that the river is not worthy of improvement, since it is not a navigable water of the United States and since it has no present commerce nor any prospective commerce of a value commensurate with the cost of improvement.

Wood River is a short stream flowing south from near Crater Lake, in the Cascade Mountains of southern Oregon, and emptying into Upper Klamath Lake at its northern end. The lake is some 30 miles long by 5 to 15 miles wide, and is quite navigable. Link River, not navigable, 1½ miles long, and at whose mouth is Linkville, forms the outlet of Upper Klamath Lake.

A small screw steamer runs on the lake from near the head of Link River to near the foot of Wood River, these landings being naturally the lowest and highest points which a steamboat can reach.

There is no business for a steamer on Wood River, except possibly some Government freighting, to cheapen which is the argument, as understood, of the citizens who desire the improvement.

The lower part of Wood River is the western boundary of the Klamath Indian Reservation; Fort Klamath, a one-company infantry post, is 1.5 miles east of a wagon bridge crossing Wood River, about 6 miles from its mouth; the Indian agency is about 2 miles east of the river and nearly half way from the upper lake landing to the fort.

Upon inquiry, the military department commander forwarded a report of the Fort Klamath post commander, stating that it is not likely if navigation by steamer on Wood River were made good that it could cheapen freight charges at Fort Klamath over the route now used. It appears further that these routes are apt to be improved in the near future by the construction of railroads in the adjacent country, and that Fort Klamath is not expected to be a permanent post. These remarks are applicable to the situation at the Indian agency.

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*Omitted.

Most of the Government supplies are delivered by wagon over the Klamath River road through Linkville, and thence over a good road to the east of Klamath Lake; it appears it would not pay to make two additional handlings of the freight to secure part water carriage, and which would replace the best part of the land haul.

A portion of the Government supplies, potatoes and flour, come from Linkville or from a mill between Linkville and the landing at the foot of the lake. These supplies go up the lake to the upper landing and thence by wagon over an excellent road, about 4 miles to the agency and 9 miles to the fort; the land freighters here are Indians, who are hired at low rates. Steamboating on Wood River would aid this freightage. The only way to attain it at reasonable cost is by means of a small light-draught stern-wheel boat of good power, instead of the two weak and deep boats heretofore used.

Wood River, even below the bridge crossing, is a narrow, rapid stream, meandering between low banks, and with a delta mouth having very shoal and intricate channels. Above the delta the depths are 2 to 3 feet, and sometimes 5 feet; the width is from 30 to 40 feet; the bed of the stream is in constant motion; it consists of light mountain detritus, slowly transported along in immense volume and through several mouths to the shoal part of the lake.

A strong, flat-bottomed stern-wheel boat could plow through the bottom or wash out a pathway, which of course would speedily fill up; but to maintain a channel by permanent works or by machines would be exceedingly difficult and expensive.

Very respectfully, your obedient servant,

CHAS. F. POWELL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF LINK RIVER, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 14, 1887.

SIR: I have the honor to here submit a report of a preliminary examination of Link River, Oregon. A report based on information obtained to that time was forwarded last February; the tenor of this report was that the river was not worthy of improvement. Since then further investigation and a personal examination have been made; and I have now to say that the river is not now worthy of improvement by the General Government, since it is doubtful if it be a navigable water of the United States, and since its present and prospective commerce are not of a value commensurate with the cost of an adequate improvement.

Link River is the outlet of Upper Klamath Lake, southern Oregon. The river is 1½ miles long, and has a fall, principally in its middle third, of some 60 feet. There is a low fixed county bridge at Linkville. This place is the county seat and local center of trade of the Klamath country, a sparsely settled grazing and farming region, and is situated at the foot of the river, and on the shore of a small lake not specially named, in which the waters spread out before forming Klamath River;

this river sends an arm from near its head into the Lower Klamath Lake, which is partly in California.

There is a small screw-steamer on the Upper Klamath Lake, and a stern-wheel boat, it is understood, is now being placed to run from Linkville to the lower lake and on some 12 miles of the upper portion of Klamath River, or to a point where the new town of Keno, Oregon, has been founded, and where a wagon bridge crosses the river. There is good water for not more than a mile below the town; rapids then commence and continue along the river's course through northwestern California almost to the ocean, some 220 miles. On this part of the river there is no navigation, nor, as far as present information goes, any expectation of navigation.

The supplies for the Klamath country are hauled in by wagon from the California and Oregon Railroad over the Klamath River road via Keno to Linkville. Wagons with Government freight for Fort Klamath and the Klamath Indian Agency go through Linkville and 28 miles further to the steamer landing on the upper lake, the nearest one to the post and agency. The full improvement of Link River would aid this Government transportation.

On the other hand, the Government establishments named are not at all likely to be permanent, and the building of railroads through or near the Klamath country, which may be expected soon, may change local transportation routes, so that Link River, even if improved, would have less influence than upon present transportation routes. A small boat railway is the plan of improvement adapted for the situation at Link River; but it is believed the whole yearly cost of the Government wagon freighting, which could be replaced by the water carriage, is less than the interest on the cost of the boat railway.

Improvement of Link River would be very convenient for the steamboat on the upper lake, since then she could land directly at Linkville, instead of approaching only within 1½ miles of the nearest business part of the town. The steamer's traffic is now entirely local. It is possible, however, that commerce from California Points on the lower lake to Linkville and to the upper lake may in the future form an interstate highway along this part of the Klamath water-way. Not much is known of the navigability of the lower lake; there has been no boating upon it as yet, and some parts are thought to be nothing more than extensive marsh.

The building of locks by the Government to overcome the 62-feet fall of Link River has been proposed, but most of the citizens whose opinion is known desire the removal of a low, narrow reef from the extreme head of the river. Below this reef, and before the main rapids commence, is a pool of slackwater, about half a mile long, and whose surface is 1½ feet to 2 feet below the lake surface. A safe channel through the reef would bring the steamboat landing a half mile nearer the town; but the main result desired is the lowering of the lake, in order to drain tracts of swamp lands, which border the Upper Klamath, and connecting lakes. A complete removal of the reef, several hundred feet long, would be necessary for this work, which may be proper for the county or State to undertake or to authorize.

Very respectfully, your obedient servant,

CHAS. F. POWELL,
Captain of Engineers,

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF SIUSLAW RIVER AND BAR, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 27, 1886.

SIR: I have the honor to transmit herewith the report of the preliminary examination of Siuslaw River and Bar, Oregon, lately made by Lieut. Edward Burr, Corps of Engineers, and to add some statements in relation thereto.

The examination was required by Department notice to me of last October 28, for compliance with the river and harbor act of August 5, 1886.

The Suislaw empties into the sea 44 miles north of the Coos Bay entrance and nearly the same distance south of Yaquena Bay, the nearest places to the mouth of the Siuslaw where works for improving entrances have been undertaken.

The Umpqua River, which admits coasters and where an examination is also ordered, lies about midway from Coos Bay to the Siuslaw.

The Siuslaw region is effectually inclosed by the Coast Mountains on the east and by their spurs on the north and south. The bar at the mouth of the river shuts out all but small vessels.

An insecure wagon road leads over the mountains from Eugene City, at the head of the Willamette Valley; a weekly mail goes this way. Most of the communication and a tri-weekly mail are by wagon on the beach from the mouth of the Umpqua.

The present industry is salmon fishing and packing. The value of last season's pack is about $15,000. Good timber and some grazing and agricultural land are reported.

It is claimed if the entrance were deepened that a railroad would be built from Eugene City, on the Oregon and California Railroad, and to a connection with the east side part of the Willamette Valley narrow-gauge system.

The population of the Siuslaw region is estimated by Lieutenant Burr at 250. Other representation places it from 750 to 1,000. There are three settlements on the river; the main one, Florence, 4 miles from the mouth, has 10 houses and about 25 residents.

An engineer examination was made of the Siuslaw in October, 1880, for compliance with the act of June 14, 1880. It was then represented by the residents on the Siuslaw that no improvement was required, but that buoyage of the entrance, its actual survey, and an official declaration of the depth were desired. The engineer in charge recommended a thorough survey of the harbor and bar for information of the shipping public, at a cost of $1,500, and stated that he did not think proper to recommend any appropriation for the commencement of an improvement at the entrance.

A survey from the entrance to Florence was made in 1883 by the Coast Survey. The preliminary sheet, scale 1-10,000, shows that the controlling depth of this part is 10 to 12 feet, and that the channel depths are generally from 12 to 15 feet, low water; nearer the entrance the channel depths are from 3 to 5 fathoms. The distance between the 12-foot curves will average about 700 feet and between the low-water banks 900 feet. The sheet shows some soundings on the bar, but not enough to develop it, but still enough to show a very shoal bar; the controlling channel depth is given as 5 feet at low water, or 11 to 12 feet at mean high water. The accuracy of these results is disputed. No other survey whatever has been made of any part of the Siuslaw River. The

Siuslaw people now much desire a new and more complete survey, buoyage of the channel, and works to hold it in one place.

The channel readily shifts, but generally works north for a few years by the growth of a south spit and then suddenly breaks through the spit; in 1883 it was to the north; it is now, and has been for a year, to the south and about a mile distant from the former position.

A few years ago the Coos Bay steamships used to make occasional trips to the Siuslaw during favorable weather and when loaded lightly. Vessel records kept for this office show that the steamers on such trips draw 10 feet; this indicates a low-water channel depth of about 8 feet at least. During the last year the small coasters *Kate and Ann* and *Mischief*, drawing from 7 to 9 feet, loaded have been to the Siuslaw.

I understand from a limited study of the entrance that the channel may not only shift, but that the depths may vary considerably at different times; that is characteristic of the small entrances on the Oregon coast. At the Siuslaw the range of channel depths at different times may be as much as from 5 to 9 feet. I judge that annual surveys, until works for permanency of channel are built, would be needed for the use of masters and vessel insurers about as much as a single survey is needed now for that purpose.

The matter of buoyage belongs in another department.

Concerning an improvement, I report that the Siuslaw is not now worthy of improvement. Inside of the entrance no improvement is needed for present or prospective demands of commerce; the river is good enough. A permanent deepening of the bar channel is desirable; it would be costly, and I am not assured that it is now necessary, neither that it certainly will be necessary for several years. The limit of improvement in depth is something like 10 feet at low water or 16 to 17 feet at mean high water. I do not believe this would warrant the construction of a railroad from the interior for a shipping point. Small coasters from the Columbia River, Yaquina Bay, or Coos Bay will take care of the present Siuslaw trade. Lumbering on the Siuslaw may, in the future, be a reason for improving the entrance; this industry, at places more favored than the Siuslaw with an improved entrance, has been depressed for several years and is still so.

The cost of a detailed survey of the entrance and a prompt issue of charts for use in the coasting trade would be $2,000, and if the survey were extended from Florence to the head of tide, as desirable, $1,000 additional. Each survey of the entrance and one of the river inside would be useful when the time comes to project a plan of improvement of the mouth.

Very respectfully, your obedient servant,

CHAS. F. POWELL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT EDWARD BURR, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 10, 1886.

SIR: I have the honor to submit the following report of an examination of the Siuslaw River and Bar, made in accordance with your instructions.

The Siuslaw River rises east of the Coast Range of mountains, about 50 miles in a straight line from the coast, and flowing in a general direction a little north of west, it enters the ocean about 22 miles to the north of the Umpqua River, draining a ter-

ritory of about 450 square miles. My personal examination extended from the bar about 24 miles up-stream to a point half a mile above the head of tide.

At the foot of the rapids the river is about 150 feet wide and has the usual characteristics of mountain streams, being rapid, full of rocks and bowlders, and with a small depth of water at the usual stages. Its freshets occur during the rainy winter season and are of magnitude enough for the driving of logs, the only possible use to which the river could be put. The only tributary of any importance seems to be Lake Creek, which enters the river some 8 miles above the head of the tide.

From the head of the tide to the bar the river is similar to other tidal streams. The tide at the bar has a mean rise of about 6¼ feet and at the foot of the rapids a rise of nearly 3 feet. To within a mile of the rapids the river has a depth ample for all purposes for which it would be used, having, as I was told, a depth of nowhere less than 16 feet. From this point to the head of tide a small steamboat would probably have little difficulty in navigating. At the head of the tide the river has a width of about 250 feet, and this width gradually increases to the North Fork, where it becomes about half a mile. From there it decreases again, being about 1,000 feet wide at Florence and at the entrance.

At the head of tide the hills rise abruptly from the banks of the river to a height of 600 or 700 feet, but gradually become lower as they approach the coast until they shade into the sand-hills. The valley between these hills has a variable width, being sometimes half to three-quarters of a mile wide, and is composed of bottom and tide lands, already nearly all taken up by settlers.

The entrance from the sea is between sand-hills of small elevation and without prominent landmarks, the nearest prominent point being Cape Perpetua, 7 miles to north.

The channel on the bar lies nearly due east and west, pointing towards a ridge of low sand-hills, but immediately turns abruptly to the south. This fact and the absence of landmarks makes it very difficult for navigators to make out the entrance from at sea.

The bar is of the sand foundation usual on this coast, and is without rocks. Both headlands are of sand, the north head being the more prominent. The river bluff on the south side comes down to opposite Florence, about 4 miles from the entrance, and is continued from there to the south head by a range of bare sand-hills from 50 to 100 feet high and composed of shifting sand. The south head, however, is low and is said not to have changed its position or shape so far as known.

The river bluffs on the north side terminate at the north fork about 6 miles from the entrance. The remainder of the north bank is composed of sand-hills covered with a growth of brush and scrub timber and with an underlying stratum of what is locally called "cement." This cement is composed of sand and shells, slightly cemented together, soft enough when in position to be cut by a spade, but more stable than the sand in its resistance to the tide currents, giving a bluff bank, with deep water close in. It lies about the level of high water, and, containing stumps of trees in their original positions, is probably the soil of what were tide-lands before the sand accumulated upon it. Due to this cement the north bank is much more stable than the south bank.

The channel on the bar is a very variable one, both as to depth and as to position. It has its greatest depth in the summer and least in the winter when the southwest storms bank up the sand at its outer entrance where it points towards the southwest. I was told of depths varying from 9 to 16 feet at low water, and the actual depth is probably 10 or 12 feet. The Coast Survey examination made in 1883 shows a depth at mean low water of but 5 feet, but the correctness of this is disputed. Vessels drawing 12 feet have passed in and out over the bar.

The channel varies its position between the heads on the north and the south of the entrance. At the time of the Coast Survey examination in 1883, the last, and probably the only survey made of the entrance, it was well to the northward with a long spit extending north from the south head. During the winter of 1885-'86 the channel broke out across this spit, forming for a time two channels; but during the summer of 1886 the north channel closed completely, and at present the sand spit, bare at high water and covered with drift, is connected at low water with the north head.

The channel, so I was told, goes through its cycle of changes in seven or eight years. Breaking through the south spit close to the south head, it slowly works its way to the north until the route for the escape of the tidal flow becomes so long that the pressure on the spit, caused by the banking up behind of the water in this long channel, due to the friction of the current, becomes so great as to break through the spit and form a second, shorter, narrower, but deeper channel. The old channel then closes. The new one gradually lengthens and widens, and goes through the same cycle again.

I transmit herewith a copy of the chart of the Coast Survey examination of 1883, and a sketch showing approximately the condition of the entrance at the time of my examination. The bar was too rough to permit of going over it in the only boat in

hand—a row-boat—but by landing at low tide on the sand spit and walking to the outer end of it a fair idea of the entrance was obtained.

The country tributary to the Siuslaw River was an Indian reservation until 1876, when it was opened up to settlements, but settlers have since been only slowly coming in, and the country is still undeveloped. The population is estimated at about 250. There is but one settlement on the river, Florence, with about 10 houses and a population of about 25. There are two other post-offices on the river, one at Acme, at the mouth of the North Fork, and the other at Neeley's, the head of tide. There is talk of building a railroad from Eugene City, but conditional to the improvement of the entrance.

Mails are brought tri-weekly from Gardiner, on the Umpqua, by beach wagon, and once a week by carrier, overland from Eugene City.

The only means of transportation in and out of the country is by these two routes, and by means of an occasional visit from one of the small coasting vessels. The Coos Bay steamers *Arcate* and *Coos Bay* have been in the river, and the steam schooners *Kate and Anna* and *Mischief* make irregular visits. Other coasters come in occasionally. Vessels will not visit the river unless guaranteed a cargo both in and out; and insurance and charters are very high, on account of the lack of information with regard to the entrance, and on account of the channels not being buoyed. The people claim that if the entrance were surveyed, buoyed, and improved, so as to furnish an outlet for the products of the country, that capital would come in to develop it and reasonable rates of insurance could be had on cargoes. They would expect only the class of vessels that visit other coast harbors with a draught of about 12 feet, and think that these vessels could be induced to visit the river if the entrance were surveyed and buoyed and if a jetty were built to hold the channel in one position.

The salmon fishery is the principal industry of the country. The June run of salmon is small, but the fall run is very large. There are at present two small salteries and one small cannery on the river. The pack this season was about 1,500 cases and about 2,200 barrels. It is expected that next year the cannery will be enlarged and one of the salteries changed to a cannery.

There is not much timber in sight from the river, the country having been partially burnt over by the great fire of 1846. I was told, however, of large quantities of fir and cedar timber on the headwaters and in the gulches back from the river. There is a small saw-mill at Acme, which supplies the local trade, and there is no outlet for any other.

The bottom and tide lands in the valley are capable of producing agricultural and dairy products.

No survey has been made of the river excepting the Coast Survey examination of 1883, and the entrance has since changed to such an extent as to require a new survey. I think the entrance worthy of a survey and suggest that it be so recommended. This survey might include the river as far as the North Fork. The time in the latter part of May and early part of June is said to be the best time for such, as that is about an interval between the cessation of the winter southwest winds and the beginning of the summer northwest winds, and the bar is then the smoothest. Such a survey could be made either from a steamtug or a whaleboat, but either one would have to be taken there as none are in the river. The cost of this survey is estimated at $1,500.

Very respectfully, your obedient servant,

EDW. BURR,
First Lieutenant of Engineers.

Capt. C. F. POWELL,
Corps of Engineers

PRELIMINARY EXAMINATION OF NEHALEM BAY AND BAR, OREGON.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 29, 1886.

SIR: I have the honor to transmit herewith the report of a preliminary examination of the Nehalem River and Bar, Oregon, lately made by Lieut. Edward Burr, Corps of Engineers.

The examination was required by Department notice to me of last October 28, for compliance with the river and harbor act of August 5, 1886.

This is the fourth engineer report of an examination of the Nehalem. Neither of the former reports recommended an improvement. They are given on pages 639 and 2409, respectively, of the Report of the Chief of Engineers for 1876 and 1885, or in Senate Ex. Doc. 42, Forty-fourth Congress, first session.

Surveys of the lower portion of the river were made by the Coast Survey in 1868 and 1875, which did not include, however, soundings upon the bar, because, I judge, of its shoalness. Breakers are shown on the maps at the sea-bar from shore to shore, and depths there are indicated to be something less than 6 feet at low water; no measure is given of how much less. Descriptions of the river and its bar and statements of the traffic of its region are given in the first and third reports named above, and in Lieutenant Burr's report.

In my opinion the Nehalem River and Bar are not now worthy of improvement.

No improvement giving easy access to the river for the medium-sized coasters is practicable at moderate cost of coast works. The present traffic does not warrant even this moderate cost. Tillamook Bay, having a good harbor and entrance for coasters and a wagon road from the interior, is 8 miles from Nehalem and connected with a low-tide beach wagon road; there are also two traveled trails north to the Columbia River. When traffic warrants the investment, wagon roads and then a railroad will probably be built from the Columbia River to the Nehalem country.

Very respectfully, your obedient servant,

CHAS. F. POWELL,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT EDWARD BURR, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Portland, Oregon, December 27, 1886.

SIR: I have the honor to submit the following report of an examination of the Nehalem Bay and Bar, made in accordance with your instructions:

This entrance has already been the subject of two reports; one made February 28, 1876, by Maj. John M. Wilson, Corps of Engineers, and contained in Senate Ex. Doc, No. 42, Forty-fourth Congress, first session; the other made October 22, 1884, by yourself, and contained in Ex. Doc. 71, Forty-eighth Congress, second session. Reference is made to the latter for a description of the river and its entrance, to which little can be added.

At the time of my visit to the Nehalem it was not possible to get out upon the bar as the sea was breaking entirely across the entrance and there was, besides, nothing but a row-boat available.

I am under the impression that there is a very small depth of water on the Nehalem Bar. No white man has ever sounded across the bar so far as I could learn. An Indian is said to have done so and reported 8 feet at low water. But parties interested in small steam coasters, having examined the entrance with the idea of entering there, declined to do so. Yet an employé of one of these coasters informs me that his vessel enters Nestucca Bay, where the depth on the bar is about 3 feet at low water. Again, on one day that I was at the Nehalem Bar, the sea was comparatively smooth, and with but a small surf on the beach. Yet across the Nehalem entrance, at low water, the sea broke almost as heavily as on the beach.

The river flows southward parallel to the beach for some 2 miles and is separated from it by a narrow sand-spit. The entrance seems to be working still further to the south, cutting away the river bank. The channel on the bar is almost a continuation of the river channel above it, and appears to extend through the breakers at a very acute angle to their general line.

The entrance might be improved by a jetty built somewhere above it, but there is nothing on the river or bay that will warrant any present expenditure for surveys or improvement.

There are but few settlers on the Nehalem. Plenty of timber and some coal, similar to Coos Bay coal, are reported. Some salmon fishing was done on the river during 1886, and the fish were carried to Tillamook Bay, 8 miles south, by wagon for packing.

Very respectfully, your obedient servant,

EDW. BURR,
First Lieutenant of Engineers.

Capt. C. F. POWELL,
Corps of Engineers.

PRELIMINARY EXAMINATION OF THE CHAGRIN RIVER AT ITS MOUTH, OHIO.

UNITED STATES ENGINEER OFFICE,
Cleveland, Ohio, November —, 1886.

GENERAL: In compliance with circular letters from the office of the Chief of Engineers, dated Washington, D. C., September 27 and October 28, 1886, respectively, I have the honor to submit the following report of "preliminary examination" on the "examination or survey, or both" of the Chagrin River at its mouth, as provided for in section 6 of the river and harbor act of August 5, 1886.

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It is assumed that the object of the survey or examination required is with a view to construction of a harbor at the mouth of the river for the benefit of the adjacent country, and, possibly, for a harbor of refuge.

From inquiry, from investigation of records, and from personal examination of the Chagrin River from Willoughby, Ohio, to its mouth, I respectfully submit the following:

The Chagrin River rises in Geauga County, Ohio, and, flowing north for a distance of about 30 miles, empties into Lake Erie about 2½ miles north of the town of Willoughby, Ohio, about 10 miles west of the harbor at Fairport, Ohio (mouth of Grand River), and about 20 miles east of the harbor at Cleveland, Ohio. Between Willoughby and the lake the stream is very shallow until a point about 1 mile from the lake is reached, where it presents a width of 110 feet and a depth of 7 feet; here it divides into two nearly equal branches, and the channel naturally shoals immediately in both. The east branch is the principal, and the west has heretofore been cut off by a pile dike, which is now in a dilapidated condition. At this dike the depth in both channels is from 1 to 4 feet, and it very gradually increases to 10 feet as we descend the stream, with an occasional pool presenting a greater depth, until a point is reached about 400 feet from the lake beach; here both branches unite and form a pool with a maximum depth of 18 feet; this is, however, almost entirely cut off from the lake, the sand beach having formed with a width of from 25 to 100 feet, and the river discharging through a constantly shifting opening, at present about 30 feet wide, with a depth of from 1 to 2 feet.

At present there is no commerce, and there is no harbor of any sort. It is possible that if a harbor were constructed that commerce might follow, but with the large city of Cleveland only 20 miles to the west, Fairport with its lines of railroad only 10 miles to the east, and the Lake Shore Railroad connecting all these, it is doubtful if any considerable

amount of commerce would ever be attracted to the mouth of the Chagrin River, even if it were made accessible to lake commerce.

Attention is invited in connection with this report to report of Maj. John M. Wilson, Corps of Engineers, dated September 24, 1880, upon a survey of Chagrin River, Ohio, made in compliance with act of Congress approved June 14, 1880, some portions of which I have quoted herein. In that report the approximate cost for a harbor at mouth of Chagrin River is estimated at $200,420, an expenditure entirely disproportioned with the probable commerce of the country adjacent to the mouth of Chagrin River. Situated as it is, so near to the harbors of Cleveland and Fairport, where vessels drawing 16 feet of water can enter at all times, and with a harbor of refuge three-fourths completed at Cleveland, Ohio, I am of the opinion that the mouth of Chagrin River is not worthy of improvement, and that the demands of commerce, either present or prospective, do not call for the construction of a harbor at the locality mentioned.

Very respectfully, your obedient servant,

L. COPPER OVERMAN,
Major of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF DARBY CREEK, PENNSYLVANIA.

UNITED STATES ENGINEER OFFICE,
Philadelphia, Pa., December 17, 1886.

SIR: In compliance with instructions contained in your letter of October 28, 1886, I have the honor to submit the following report on a preliminary examination of Darby Creek, Pennsylvania:

Darby Creek is about 20 miles long, and discharges into the Delaware River just below the lower end of Tinicum Island, or about 14 miles below Market street ferries of Philadelphia, between Smith's Island and the mouth of Cobb Creek, a distance of 2½ miles. Darby Creek forms the western boundary of the twenty-seventh ward of the city of Philadelphia.

The tides of the Delaware River flow into the creek for a distance of about 7 miles to the village of Darby, where they are arrested by a dam. The mean rise of the tides at Darby is about 5 feet, increasing to about 6 feet at the mouth of the creek.

Below the village of Darby the creek is crossed by two railroads and three highway bridges, of which the lower railroad and the two lower highway bridges are provided with draws. The lower 5 miles of the creek has a width of from 125 to 175 feet, the remaining 2 miles a width of from 75 to 100 feet. From the mouth of the creek to the "Magazine," a distance of about 4 miles, the mean low-water depth is from 12 to 10 feet, with small areas of much greater depth. In the next one-half mile of creek above the "Magazine" the mean low-water depth is from 6 to 4 feet. Above this the water rapidly shoals so that the mean low-water depth is less than 1 foot, with considerable distances where at low water the creek is practically dry.

The bed of the creek, except near the mouth, appears to generally consist of coarse sand and gravel. About 1 mile below Darby village rock occurs along the bank and probably underlies the bed of the creek in this vicinity at no great depth.

The present 6-foot channel terminates about one-half mile above the "Magazine" or 2 miles below the Philadelphia, Wilmington and Baltimore Railroad Bridge, which has no draw and is just below the village of Darby. To make this 2 miles of creek navigable by dredging a channel 75 feet wide and 6 feet deep at mean low water can be roughly estimated to cost about $50,000, provided no rock has to be excavated. Persons residing near the creek say that it is subject to quite severe freshets, so it is probable that the channel would have to be constantly redredged.

This improvement would, as far as I can learn, benefit the township of Darby, containing a population of perhaps 1,500, mainly by reducing the freight on coal, wood, lumber, and building sand. There is no commerce at present to be affected by this improvement, but, if the improvement were made, the coal, lumber, wood, and building sand used in the village of Darby would be brought at reduced rates by boat, instead of by railroad as at present.

The prospective demands of commerce I am unable to estimate, but I do not consider them great enough to justify the expenditure of $50,000, or even half that sum, to move the head of navigation 2 miles further up the creek without any assurance of the improvement being permanent.

In conclusion, it is my opinion, in consideration of the above facts, that Darby Creek, Pennsylvania, is not worthy of improvement by the General Government.

A sketch* of the creek is inclosed.

Very respectfully, your obedient servant,

HENRY M. ROBERT,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF LITTLE NARAGANSETT BAY, ENTRANCE TO THE WHARVES AT WATCH HILL, RHODE ISLAND.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report upon the preliminary examination of Little Narragansett Bay, entrance to wharves at Watch Hill, R. I., provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 16th instant.

Watch Hill is at the southeast corner of Little Narragansett Bay, and the cove in which are situated the two small wharves belonging to the settlement at Watch Hill is separated from Block Island Sound by a narrow sand beach.

At Watch Hill is a light-house, a life-saving station, three or four large hotels, and several cottages. The only business of the place is that of a summer watering place, and as such it is yearly increasing in popularity on account of its exposure to the sea breezes, which blow in from the ocean between Block Island and Montauk Point, the eastern end of Long Island, which lies opposite and about 15 miles distant from Watch Hill.

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* Sketch omitted.

The only vessels which go to Watch Hill are, as I learn, a steamer which runs between New London and Block Island, touching at a wharf which has been built on the outside (the Block Island Sound side) of the beach; one steamer, which runs from Norwich, Conn., and draws about 5 feet of water; one from Westerly, R. I., drawing about 4 feet of water; and one of less draught, which runs between Stonington, Conn., and Watch Hill. The three latter vessels land at one or the other of the two wharves on the Little Narragansett Bay side of Watch Hill, and all of them run only during "the season," or from three to four months in summer. Their business is exclusively that of carrying passengers to this sea-side resort, and the provisions and other supplies used by them. I did not inquire, but the Government supplies for the light-house and the life saving station are doubtless landed not on the bay side, but at the outside wharf.

The difficulties at the Watch Hill Landing, in Little Narragansett Bay, complained of, is a shoal place in the channel leading to the wharves, and 800 or 900 feet from them, and the point of a shoal which makes out from Napatree Beach, just west of the wharves, and interferes with the turning of the steamers when approaching and leaving the wharves. In the fiscal year 1883–'84 there was expended, on my recommendation and with the approval of the Chief of Engineers, in the removal of bowlders from the Watch Hill Channel at the place just referred to, about $600, being a portion of the small remainder of the appropriation which was made for the excavation of the main channel through Little Narragansett Bay leading from Stonington to the mouth of Pawcatuck River.

The width of the Watch Hill Channel was increased from 90 to 165 feet, but no dredging was done, and the general depth remains unchanged, and is doubtless insufficient for the largest of the steamers which run to Watch Hill during the months between the middle of June and the first of October; but, as has before been indicated, there is no other use of the channel leading to the wharves at Watch Hill except the carrying of one or two cargoes of coal annually for the use of the hotels and cottages.

I am of the opinion, therefore, that Watch Hill Landing, Little Narragansett Bay, does not promise such benefit to commerce as to justify any expenditure upon it by the United States, and is not worthy of improvement.

Very respectfully, your obedient servant,

GEORGE H. ELLIOT,
Lieut. Col. of Engineer.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF CEDAR BAYOU, TEXAS, WHERE IT EMPTIES INTO GALVESTON BAY.

UNITED STATES ENGINEER OFFICE,
Galveston, Tex., January 10, 1887.

GENERAL: The river and harbor act of August 5, 1886, provided for the survey or examination of "Cedar Bayou where it empties into Galveston Bay," if after a preliminary examination by a local engineer the stream should, in the opinion of the Chief of Engineers, be worthy of improvement by the General Government.

By your letter of September 27, 1886, this preliminary examination was assigned to Major Mansfield, and it has since fallen to me as his successor in charge of this office. I am required to state whether, in my opinion, the stream is worthy of improvement, with reasons.

Under the river and harbor act approved June 23, 1874, a survey of this locality was made in November, 1874, under the direction of Capt. C. W. Howell, whose report may be found in the Annual Report of the Chief of Engineers for 1875, page 941.

Captain Howell estimated that it would cost $5,750 to excavate a channel 100 feet wide and 5 feet deep through the bar at the mouth of the bayou, and he thought that the commerce of the stream was sufficient to justify that expenditure. He thought that subsequent dredging would be required from time to time to maintain the channel, but for this he made no estimate.

Since the date of Captain Howell's report much dredging has been done in Galveston Bay, and comparative surveys have furnished data for estimating the degree of permanency of such work. A channel was dredged by the Buffalo Bayou Ship-Channel Company in 1875–76, for a distance of about 5 miles out into the bay from Morgan's Point, the width of the cut being from 120 to 150 feet, and the depth of excavation being nowhere less than 6½ feet. An examination in 1883 of the lower end of this cut showed that so far as the examination extended it had been entirely obliterated.

Between May, 1879, and May, 1880, a channel 100 feet wide and 12 feet deep at mean low tide was cut by the Government from Bolivar Channel to Red Fish Bar, a distance of 9½ miles, the average depth of the excavation being about 4 feet and the amount of material removed being 703,646 cubic yards. In October, 1882, there had been a fill of about 543,000 cubic yards, or 77 per cent. of the amount excavated. The average depth of the fill was 2.91 feet, which is 73 per cent. of the average depth of the cut. (See Annual Report of the Chief of Engineers for 1883, pages 1079, 1080). That is, in 2⅓ years about three-quarters of the work had been undone by natural causes.

It is reasonable to suppose that the rate of deterioration would be more rapid during the first year than during the second, and it is therefore favorable to the easy maintenance of the channel to assume that the rate was uniform during the 2⅓ years. Even with this assumption it appears that the amount of fill was over 30 per cent. per year of the amount of excavation.

There is nothing about the bar at the mouth of Cedar Bayou which gives reason to expect greater permanency in an excavation made there than in one made elsewhere in Galveston Bay. On the contrary, the direction of the flow of San Jacinto River would indicate that a more rapid fill might be expected there than elsewhere. It is rather an underestimate, therefore, to assume that whatever amount may be required to excavate the channel, at least 30 per cent. of that amount will be required annually to maintain it.

I am not able without a new survey to verify the estimate made by Captain Howell, in 1874, but it is probable that that estimate, $5,750, is not very far from what the work would now cost.

Thirty per cent. of $5,750 is $1,725, which may be taken as the annual cost of maintenance. This sum, capitalized at 4 per cent., is $43,125. Adding this to the original cost of the work we find its total cost to be $48,875, instead of $5,750, or, reversing the process and adding the interest on the original cost, 4 per cent. on $5,750 equals $230, to the an-

nual cost of maintenance, we have an annual outlay of $1,955 as the amount required to construct and maintain the proposed improved channel.

This is the measure of the benefit that those who use the channel must derive annually from its improvement to make the work expedient.

In a letter to this office, dated December 20, 1886, from Mr. J. P. Davie, of Galveston, Tex., the commerce of Cedar Bayou for the first eleven months of 1886 is stated to be as follows:

	Value.
Transported from the bayou to Galveston:	
Bricks, 602,304	$60,000
Cotton, 300 bales	15,000
Wood, 1,000 cords	5,000
Charcoal, 5,000 bushels	2,500
Cattle, hogs, fowls, and eggs	2,000
	84,500
Transported to the bayou from Galveston:	
General merchandise	90,000
Total	174,500

In addition to this there is some trade to Buffalo Bayou, Trinity River, and the coast of Texas and Louisiana, which would swell the amount, he thinks, to about $200,000 per year.

The freight rates are given by Messrs. Milan & Bros., of Galveston, as follows:

Bricks, 6,023 M, at $2	$12,046
Cotton, 300 bales, at 75 cents	225
Wood, 1,000 cords, at $2	2,000
Charcoal, 5,000 bushels, at 5 cents	250
Cattle, hogs, fowls, and eggs, approximately	250
General merchandise, say 18,000 barrels, at 25 cents	4,500
Total freight charges upon a trade of $174,000	19,271
Freight charges upon a trade of $200,000, say	22,000

Boats are now loaded to about 3½ feet draught. With an improved channel over the bar, they could load to 4½ feet draught, and could carry about one third more freight. The cost of transportation would be reduced, though not in the proportion of one-third, since the loading and unloading, which forms a large part of the expense of transportation, would remain the same, and since it would often happen that full loads would not present themselves. A saving of 10 per cent. might perhaps be expected. This would amount to about $2,200 per year, and as the annual expense of the work would be but $1,955, the improvement would seem to be a good investment for those engaged in the freighting. They would hardly be able to reduce the freight charges if they paid for the work, but they would have a small additional profit from their business.

The question, is the stream worthy of improvement, as a bare proposition, is therefore answered in the affirmative.

* * * * * * *

I think it proper, when stating that Cedar Bayou is worthy of improvement, to state at the same time that I do not recommend its improvement by the General Government.

Very respectfully, your obedient servant,

O. H. ERNST,
Major of Engineers.

Brig. Gen. JAS. C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF MATTOX CREEK, VIRGINIA.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., December 3, 1886.

GENERAL: In compliance with your order of September 27, 1886, I have the honor to report the result of a preliminary examination of Mattox Creek, Virginia, made with the object of determining whether it is worthy of improvement.

GENERAL DESCRIPTION.

Mattox Creek is a navigable tributary of the Potomac River, into which it empties about 70 miles below Washington City, and about 2 miles below the landing of Colonial Beach. Its course is northeast. The channel by which the landings in the creek are approached is very tortuous and shoals gradually from the 10-foot curve in the river to the upper wharf, which is about 3 miles distant from the curve in the Potomac.

The width at the mouth is about 4,000 feet between banks, and just above the upper wharf the width contracts to about 600 feet. The range of tide at Colonial Beach is 1.4 feet.

SURVEY.

It would be necessary to survey the channel from the 10-foot curve in the river as far as the upper wharf, or for a distance of about 3 miles. This survey would cost about $400.

THE CREEK NOT WORTHY OF IMPROVEMENT.

Mattox Creek is one of the landings of steamers, which, like the *Mattano*, draw from 5 to 6 feet of water when loaded.

The annual shipments and deliveries of produce and goods made by steamers amount to about $35,000.

The amount of shipments by sailing vessels is unknown.

The large steamers do not enter the creek, and the owners of the *Mattano* are satisfied with the present depth of the channel.

As I find no wish among the steamboat companies for an improvement of the channel into Mattox Creek, I do not recommend it for survey.

Very respectfully, your obedient servant,

S. T. ABERT,
United States Agent.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF ROANOKE RIVER FROM CLARKSVILLE, VIRGINIA, TO EATON FALLS, NORTH CAROLINA.

UNITED STATES ENGINEER OFFICE,
Washington, D. C., December 9, 1886.

GENERAL: In compliance with your order of September 27, 1886, I have the honor to report the result of a preliminary examination of the Roanoke River between *Clarksville*, Va., and Eaton Falls, North Car-

olina, made with the object of determining whether this part of the river is worthy of improvement.

GENERAL DESCRIPTION.

Two navigable tributaries, the Dan and Staunton rivers, unite near Clarksville and form the Roanoke, which continues under this name to Albemarle Sound. The following facts are taken from my report which may be found in the Report of the Chief of Engineers for the year 1882, page 1060.

The distance from Clarksville to Eaton Falls is 56.13 miles.

The river, varying from 600 to 1,300 feet in width, winds through a valley which is from one-half to 1 mile between the bluffs.

The arable land in the valley amounts to about 22,000 acres.

The banks are generally low, and the contiguous low land is moderately fertile, producing from 200 to 400 pounds of tobacco to the acre and about the same quantity of cotton, and from 5 to 10 bushels of corn and about 12 bushels of wheat. Near Clarksville tobacco is largely planted, but cotton is preferred for the land near Weldon.

Lumber can be bought at the mills for about $10 per thousand.

Good building-stone is found in the hills and bluffs, of a granitic character.

ESTIMATES.

The report contains an estimate for improving each shoal, which was submitted to the Chief of Engineers without maps or profiles on account of the want of funds to complete the necessary reductions and copies.

The principal obstructions are seventeen in number, and consist, for the larger part, of ledges of rock. It was proposed to cut a channel through them, with a width of about 35 feet and a depth at low water of 2½ feet.

The maximum slope of the improved water-surface was to be about 10 feet to the mile.

The estimate for the work was $182,000, and was made on the assumption that Congress would grant the entire amount in three successive appropriations.

It would be proper to run a line of test levels from Clarksville to Eaton Falls before beginning work.

WHETHER THE RIVER IS WORTHY OF IMPROVEMENT.

As early as 1824 the river had been improved by the Roanoke Navigation Company by means of sluices and low training-walls. At the present time the sluices and training-walls are out of repair, and the farmers are obliged to haul their produce to the nearest market, which is 30 or 40 miles distant. When the improvement was in good condition as many as 355 bateaux were engaged in the transportation of produce. The capacity of each bateau was about 10 hogsheads of tobacco, or 200 bushels of wheat, or 60 barrels of flour.

At the present time four or five boats transport all the freight which passes upon the river between Clarksville and Eaton Falls. The produce which formerly traveled by way of the river must now find its way to market by the railroad.

If the river were improved shippers would have a choice of two routes to Norfolk, one by the way of the Lower Roanoke, Albemarle Sound,

and the Albemarle and Chesapeake Canal, and the other by the Seaboard and Roanoke Railroad. In the former case the river would become a competitor for a trade which is now carried exclusively by the road.

Residents of the valley are earnest in their desire for an improvement of the channel which would give them these advantages and would connect Danville and Clarksville with Norfolk by a water-way.

I am, however, unable to say to what extent the trade of the river would be increased by the improvement. This question can not be determined without trial.

I would respectfully recommend the completion of the maps and profiles mentioned in the report of March 10, 1882, and would ask for $160 for this object.

Very respectfully, your obedient servant,

S. T. ABERT,
United States Agent.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF COAL RIVER, WEST VIRGINIA.

UNITED STATES ENGINEER OFFICE,
Baltimore, Md., January 28, 1887.

GENERAL: Notice was received October 4, 1886, that the preliminary examination of Coal River, West Virginia, was placed in my charge, and an estimate of funds for making it was called for. It was October 29 before it could be known how much money was available for this object. The amount was very small.

A reconnaissance of the river was made in November, 1886, by Mr. William C. Reynolds, as it was impracticable for me to attend to that duty in person, owing to the pressure of others of greater importance. The original name of this river was Cole, but the present name is a very appropriate one.

The following account of the river is taken from the report of Mr. Reynolds:

Coal River empties into the Great Kanawha River 12 miles below Charleston and about 1 mile above the located site of Lock and Dam No. 7 of the Kanawha River improvement. Ascending the stream from its mouth, Coal River is found to follow a very winding course among the low-lying hills for 12 miles, then assuming a line of more graceful curves, until a point is reached 18 miles up, where the river divides into nearly equal forks, which are called respectively Big and Little Coal rivers.

From there it is about 70 miles to the heads of the two streams, which embrace a water-shed, averaging 15 miles in width, or over 1,000 square miles of territory.

With the exception of narrow strips of bottom-land bordering the rivers and larger creeks, the whole area is covered with hills, which gradually increase in height, beginning at the Forks with 300 feet, and rising to a height near the heads of the rivers of 1,200 feet above the adjacent valleys.

The soil is naturally rich, even to the mountain tops, and the country generally devoid of the ruggedness characteristic of the majority of streams in this section of the State.

While the principal pursuit of the people here is farming for self-support, a considerable business has been carried on for fifty years or more, in the cutting of timber, of which their rich mountain slopes contain the greatest abundance. Recent estimates place the amount of merchantable timber remaining in this district at 14,000, B. M., feet per acre; one-third of this I would judge to be poplar, one-third oak, and the rest walnut, hickory, ash, etc. But the lumber business languishes now, for reasons which I will endeavor to explain further along, and will first beg to call your attention to the geological, or rather mineralogical, features of the country.

Coal River, as its name implies, is remarkably blessed in the abundance and fine quality of its coals. The mountains embrace above water-level that portion of the coal formation lying below the Pittsburgh seam and above the great conglomerate rock a vertical distance here of over 1,000 feet. The strata lie almost horizontal, rising but little faster than the stream, as we ascend the valley, allowing vein after vein of coal to appear above the water-level, until, as has been reported, twenty or more have been counted near the upper waters. The coal is mostly highly bituminous, yet some of the lower strata seem to be suitable for gas, and perhaps, coking purposes. But the principal claim of this field for excellency, above all others, is in the quantity and fine quality of its cannel-coal, which is the only coal that has ever been mined for shipment from Coal River, and a history of the enterprise connected with the shipment of this coal bears directly upon the subject of river improvement, for it is in consequence of the abandoned works of a co-operating navigation company that the present navigation of the river is most seriously obstructed.

The Coal River Navigation Company procured a charter from the State of Virginia March 17, 1849, and up to March 17, 1856, the State paid $96,000 on her stock, and with this sum and other subscriptions somewhat exceeding this amount, the company had in the mean time constructed eight locks and dams and established slack-water navigation from the Kanawha River to the Peytona cannel-coal mines, on Big Coal River, a distance of 34 miles.

The shipment of coal was commenced in 1857, and continued until 1861, when the breaking out of the war put a stop to operations. After the war the company was revived, December 23, 1865, and the name changed to Navigation Company of Coal River. The works were put in repair and kept up until 1882, when they were abandoned. In my examination of Coal River, as I have been for a long time generally familiar with all parts of the stream, and was in possession of the notes of a survey which I conducted three years ago for a projected railroad from the mouth of the river to Walnut Gap at the head of Little Coal, I deemed it best to confine my labors in the field to the condition and present status of the works of the Navigation Company above mentioned.

All the dams from Nos. 4 to 8, inclusive, were found broken to their foundations, and offering no obstruction to navigation; but Dams 2 and 3 are still kept up by parties owning flouring mills located at these points; also Dam No. 1, near the mouth of the river, is kept up by the owners of a steam saw-mill operating there.

The locks, which were simply cribs of timber and stone, are utterly decayed and wrecked at all the dams. Lumbermen complain of these obstructions now, as they are forced to turn their logs, etc., adrift in the stream and risk the chances of securing them again at some point below these dams, and, as a high tide is required to float the timbers over the dams, the rapidity of the current is then so great they are compelled to suffer much loss, or at best are put to heavy expense in regaining their property, whereas were these removed the lumber could be put into rafts as in former times, at convenient points along the river, and these could be manned and guided down the stream in safety whenever there was sufficient tide to float them. That these dams are kept and maintained in violation of law there can be no doubt. The State of Virginia, by act of January 31, 1834, declared this river a public highway, from its mouth to designated points, some 25 or 30 miles above the forks, and the franchises granted the Navigation Company, as I learned at the office of the secretary of state, are by the State of West Virginia declared forfeited, both by reason of nonusance and by failure to comply with the act requiring a certain annual tax to be paid by such corporations in order to perpetuate their franchises.

Coal River is a stream 270 feet wide at ordinary low water at its mouth, and 200 feet at the Forks. From there, either fork carries a width of 150 to 125 feet for 20 miles up.

The bed of the river shows solid rock exposed in very many places, of which fact the old navigation company made good use, as nearly all their dams are located where the rock protrudes above the general bed of the river.

At Lock 2, or Lower Falls, 6 miles up, there was almost a perpendicular fall of 10 feet: at No. 3, or Upper Falls, 11½ miles up, there was about 8 feet.

The declivity of the river-bed from the Forks to the mouth, including the two falls, is about 2 feet per mile, or 35 feet in 18 miles. From the Forks up Big Coal, the slope is 3 feet per mile for 16 miles; up Little Coal it is 3 feet per mile for 10 miles; 3.6 the next 10, and a few miles beyond this the slope increases rapidly, until, within 5 miles of the head of the river, it reaches 50 feet to the mile.

With well-constructed dams I think there is water enough to maintain slackwater navigation the year round.

The following information also comes from a reliable authority, Mr. H. W. Goodwin, long connected with the navigation of the river.

About the year 1849 Col. Wm. M. Peyton, of Virginia, bought a large tract of land where Peytona is now located, contemplating opening and operating cannel-coal

mines and improving the river by slackwater navigation. He probably mined and shipped, when there was sufficient water in the river, 50,000 bushels of cannel-coal prior to 1857.

About 1853 or 1855 the property was purchased by New York and Philadelphia parties, forming an organization known as "The Virginia Cannel-Coal Company," and "Western Mining and Manufacturing Company."

In the year 1849 a charter was granted to the Coal River Navigation Company, and preliminary arrangements made to commence work, funds being raised by stock subscription and contribution from the Board of Public Works of Virginia.

Work of construction progressed very slowly until the year 1856 and 1857, when nine locks and dams were completed. Eight were located on Big Coal River, and Lock A on Little Coal River.

In the year 1858 there was very high water, injuring three or four of the locks and dams quite badly and retarding the shipment of coal for some months. They being repaired, the navigation remained uninterrupted for any length of time until September, 1861, when there was a flood such as was never known in the valley, injuring more or less all of the locks and dams. The war breaking out this year the coal companies operating at Peytona closed their mines, and the river remained without care or attention until the year 1865, when the Peytona Cannel-Coal Company was organized by Dr. Henry Du Bois, of New Haven, Conn. He and other New York capitalists formed the organization. Through his influence with foreign capitalists, stock was taken to purchase the franchise of Coal River and rebuild the old locks and dams.

This work was completed by the Navigation Company of Coal River and the river opened for the passage of loaded barges and steamboats in the spring of 1867, and continued o without serious or long delays until the spring of 1881. The Peytona Cannel-Co Company closed their mines and suspended all work at Peytona December, 1880, owing to the decline in the price of their coal and expense of operating their mines. In addition, the locks and dams had become very much decayed, and the expense of thoroughly repairing them would not justify the outlay of money by the stockholders or Peytona Cannel-Coal Company.

The following figures are quite accurate as to the cost of the improvements and the maintaining of the river works from year 1849 to 1861, and also from 1865 to 1881, made by the Coal River Navigation Company:

From year 1849 to 1861, stock	$112,975.00
Board of Public Works	96,000.00
Bonds secured by trust	54,212.54
Tolls collected	16,293.99
Total amount expended by Coal River Navigation Company	279,481.53
Amount expended by Navigation Company of Coal River, repairing old works and maintaining same from year 1865 to 1880, inclusive	282,780.70
Paid for old works of river franchise	85,698.79
	368,479.49

The toll receipts from coal and other sources did not, on an average, exceed $5,500 per year to the credit of the navigation companies.

The quantity of coal shipped down Coal River, from the first opening of the cannel-coal mines, viz:

	Bushels.
Mined and shipped by Col. William M. Peyton, previous to the improvement of the river, estimated	50,000
By the Western Mining and Manufacturing Company:	
1858 and 1859	400,000
1860	800,000
1861 (estimated)	100,000
By Virginia Cannel-Coal Company:	
1859 and 1860	732,328
1861	22,047
Total shipments of cannel-coal up to 1861, inclusive	2,104,375
The Peytona Cannel-Coal Company mined and shipped from year 1868 to 1880, inclusive	11,434,306
Total shipments from Peytona cannel coal field at Peytona, Boone County, W. Va	*13,538,681

* Or 536,547$\frac{480}{1000}$ tons.

The following shows the original dimensions of the several locks and dams:

Dam.	Length.	Height.	Lift of lock.
	Feet.	*Feet.*	*Feet.*
No. 1	241	12.00	8.00
No. 2	270	19.10	15.10
No. 3	273	15.60	11.60
No. 4	132	13.40	9.40
No. 5	110 / 160 } 270	12.20	13.20
No. 6	203	18.10	14.10
No. 7	230	14.70	10.70
No. 8	144	15.80	11.80
A—Little Coal	.....	17.60	13.50

It is thought that with good and well-constructed locks and dams, cheaply maintained, water could be secured to operate for nine months during the year, to pass boats or barges drawing from 3 to 5 feet of water.

The records for twelve years indicate that the average period of annual obstruction by ice was about thirty days, and that the whole loss of time from low water and ice did not exceed ninety days each year for passing boats drawing from 30 to 50 inches.

A survey of this river is said to have been made many years ago by General W. S. Rosecrans, or under his direction. I have seen a copy of the map in the possession of Maj. T. L. Brown, of Charleston, Kanawha County. The report I have not seen. There is no doubt of the existence of much very valuable coal and timber in the country drained by Coal River.

Much interesting information on this subject can be found in the following papers:

1. Annual Reports of the Navigation Company, specially those of 1859 and 1866, by Maj. T. L. Brown, of Charleston, Kanawha County, kindly loaned me by Major Brown.

2. Resources of West Virginia, by M. F. Maury and William M. Fontaine, 1876.

3. Reports of Mr. John G. Stevens, in October, 1884, and of Bernhard E. Fernon to Hon. A. S. Hewitt, in 1883, loaned me by Major Brown.

4. Report on the property of the Cabin Creek and Coal River Land Association, 1886, by Maj. Jed Hotchkiss, Staunton, Va.

This river has been already the subject of a slack water navigation under the authority of the State. The locks and dams were not constructed in the best manner, probably from want of sufficient money, and in some cases the locations seem not to have been judiciously determined upon. The works have gone almost completely to decay, and it is understood the charters of the navigation companies have no longer any force. The project has been a failure.

The owners of the property seem to prefer the construction of a railroad for its development. From the information available, it is estimated the cost of improving this river, with locks and dams well located and built, would be not less than $1,750,000, this estimate having in view locks with chambers 25 feet by 125 feet in the clear and with 4 feet water on lower miter-sill.

It is doubted, however, whether the water supply would suffice for a constant navigation of 4 feet. More detailed observations are necessary to settle that point. The annual cost of maintenance would be about $15,000.

Under all the circumstances, I can not consider it judicious for the General Government to enter upon the improvement of this river, at

least at this time, and therefore it becomes my duty, under the law, to say that in my opinion the stream is now "not worthy of improvement."

Very respectfully, your obedient servant,

WM. P. CRAIGHILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

PRELIMINARY EXAMINATION OF HARBOR AT HUDSON, LAKE ST. CROIX, WISCONSIN.

ENGINEER OFFICE UNITED STATES ARMY,
Saint Paul, Minn., December 6, 1886.

GENERAL: I have the honor to submit the following report of a preliminary examination of the harbor at Hudson, Lake St. Croix, Wisconsin, made in pursuance of sections 6 and 7 of the river and harbor act of Congress approved August 5, 1886.

Hudson is on the east bank of the lake and distant about 20 miles from the mouth of the river of which the lake is an enlargement in width. The harbor was surveyed in 1879. The St. Croix River from the mouth to Taylor's Falls, a distance of 57 miles, has been under improvement in consequence of appropriations by Congress for that purpose made in 1878 and subsequent years.

Following is an extract from the report of Assistant Engineer F. T. Hampton, who visited Hudson on the 1st instant, for the purpose of obtaining statistical and other information bearing upon the public value of the harbor:

As there are no commercial organizations of any kind in Hudson, my only means of ascertaining anything was by interviewing those citizens who had been in business for a number of years.

* * * * * * *

Before the day of railroads the river was the natural outlet to the trade of this section. Hudson then shipped all its grain by river. * * * But this river trade has all passed away. Only occasionally does a boat touch at Hudson. During the past navigation season there were about two boat arrivals per week, usually the *Cleon*, plying between Saint Paul and Stillwater, which would handle at this point a small amount of freight.

* * * * * * *

I have not been able to learn the amount of freight handled, but I judge from the opinions I heard expressed that it would not exceed 150 tons.

The country around Hudson is very fertile and thickly settled by a prosperous people. Wheat is the great staple; about 1,200,000 bushels are shipped by rail from Hudson annually. The population of the town is 3,500; few manufactories. There are three flour-mills in and near the town, total capacity 400 barrels per day; one saw-mill, capacity 8,000,000 feet, B. M., annually. I endeavored to learn the tonnage in and out by rail, but this informa tion could not be furnished by the local railroad agent.

The public feeling appears to be that the Government, in improving the channel on the right side of the river in the general interests of navigation, deprived Hudson of any advantage there might be in having the main channel to pass in front of the town, and that now something should be done to repair this injury by improving the channel in front of the town. This forms the basis of Hudson's demand.

It is my opinion that if the commerce existed, any steamboat which could get up to Saint Paul could easily get to Hudson, in the present low-water condition of the river. The boat might not be able to reach the "depot" landing at Walnut street, but could get sufficiently near not to be inconvenient for business. Boats drawing 4 feet can, on a low stage, get up to Commercial street, within two blocks of the depot (this is the lower "depot").

* * * * * * *

Hudson has superior natural advantages for good steamboat landings a few blocks below the depot. There is ample depth of water at all times; a few short docks are

all that is needed. I think it of questionable utility for the Government to spend money in opening a channel up to Walnut street, which appears to be the desire of the citizens. I think, however, a survey might be made to ascertain the necessity, if any, of building a dike somewhere above Walnut street, say near foot of Vine, to arrest the encroachment of the sand bar on the channel in front of the town. I do not know that this encroachment is taking place, but it appears to me that this would be the only useful object of the survey. It might also determine whether the construction of the United States dam threatens (as some citizens of Hudson maintain it does) to shoal up the channel in front of the town by destroying the current, formerly due to the Brick-yard Channel.

It is difficult to predict, in the absence of definite or extended information, the prospective value to commerce of an improvement at Hudson by extending deep water to a point opposite the lower railroad depot. The cost of a dike to direct the deposits from Willow River from the channel along the Hudson front, and the rate of increase of shoaling in front of the city, could only be determined by a survey.

The shoaling is almost entirely due to a railroad embankment which juts out into the lake from a point just above the mouth of Willow River, and extends to within 1,250 feet of the west bank. From the end of this embankment to the west bank are several railroad bridge spans, all of which, the draw-span and one long span excepted, are closed to ordinary low-water discharge by masses of riprap and débris. The effect of the embankment and obstructed spans is to deprive the city front of the scouring action, more or less, that might otherwise be expected when the St. Croix is at a fair stage.

The training-dam, parallel to the west bank and distant about half a mile from Hudson, constructed by the United States for the general improvement of the river, has no bearing upon the shoaling along the city front.

In view of the facts stated, I am of opinion that no improvement at present is needed for the harbor at Hudson.

Very respectfully, your obedient servant,

CHAS J. ALLEN,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 59.

ANNUAL REPORT OF THE MISSISSIPPI RIVER COMMISSION.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING

The annual report of the Mississippi River Commission.

JANUARY 9, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, December 29, 1887.

The Secretary of War has the honor to transmit to the House of Representatives the annual report of the Mississippi River Commission for the fiscal year ending June 30, 1887.

WM. C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

REPORT OF THE MISSISSIPPI RIVER COMMISSION.

THE MISSISSIPPI RIVER COMMISSION,
PRESIDENT'S OFFICE,
New York, December 14, 1887.

SIR: The Mississippi River Commission has the honor to submit a report for the fiscal year ending June 30, 1887, embracing the following subjects:

(1) Surveys and examinations.
(2) Construction.
(3) Financial statements.
(4) Estimates for the fiscal year ending June 30, 1889.
(5) General observations.

SURVEYS AND EXAMINATIONS.

At the close of the last fiscal year the appropriation for surveys and expenses of the Commission was practically exhausted. The act of August 5, 1886, contained an appropriation of $30,000 for surveys of the Mississippi River, which, *although* too small in amount to justify a

resumption of field work, enabled work to be resumed in the office of the Commission, and it has been prosecuted throughout the year. Work has been mainly on the still incomplete maps of the surveys below Cairo. In addition, the map of the Alluvial Valley has been published, and the results of the discharge observations of 1885 have been tabulated, besides much miscellaneous work. There still remains much to be done in this line before the great mass of information of all kinds collected by the Commission can be published. While its actual cost in money has been several hundred thousand dollars, its actual value can not be even estimated, embodying as it does the most extensive collection of hydraulic observations and data of which there is any record. It should be published with as little delay as possible, if only to insure its preservation. The survey of the Mississippi River below Cairo is now completed. It has been begun above that point, and partially completed to Grand Tower, Ill., while the triangulation has been carried to Keokuk, Iowa, and the levels to Fulton, Ill. The completion of this great work is of the greatest importance, and should be pushed with as great celerity as is compatible with economical execution.

(For details, see report of Capt. S. S. Leach, Corps of Engineers, secretary of the Commission, Appendix A.)

CONSTRUCTION.

FIRST DISTRICT.

(Cairo to foot of Island No. 40. Officer in charge, Capt. S. S. Leach, Corps of Engineers; headquarters, Memphis, Tenn.)

This district includes the work on Plum Point Reach, and at the harbors of Columbus and Hickman, Ky.

Harbors of Columbus and Hickman, Ky.—Special appropriations of $18,750 were made for each of these two harbors by the river and harbor act of August 5, 1886, but as the sums so appropriated were considered by the Commission entirely too small to commence the work needed, it was recommended by the Commission to the Secretary of War that the money be not expended.

Plum Point Reach.—At the end of the last fiscal year the current allotment for this work was about exhausted. As the season was far advanced, orders were given immediately after the passage of the river and harbor bill to put the plant pertaining to the reach in condition for service. This was done.

In September, $377,250 was allotted for work on the reach, and projects were prepared and approved by the Commission for its expenditure. These projects were not approved by the Secretary of War, presumably for reasons to which reference will be made later, and in consequence there has been but little work done on the reach. In December a project for repairs to the Bullerton and Plum Point dikes was approved by the Secretary of War, and the repairs to the Plum Point dikes were carried out. Before work could be begun on the Bullerton dikes they were breached by heavy masses of drift, and subsequent examination shows them to be beyond the reach of repair. No scour has taken place in the chute of Bullerton towhead, but as a matter of precaution a new dike will be built below the site of Dike No. 2. All these dikes were greatly weakened by the decay of the piling used in their construction.

The revetment at Fletcher's Field still remains in place and substantially holds the line of bank. The middle section lost about 500 feet during the year, and, as it is attacked by eddies at both ends, owing to

the incomplete condition in which it was left, its destruction is only a question of time, when undesirable changes will take place in the channel below. The Commission intended to complete this work, but their action was not approved, as stated above.

An allotment of $100,000 was made by the Commission to construct a levee on the upper side of Plum Point, to cut off the large volume of water which in times of flood flows across this point, and force it to follow the main channel. This levee was fortunately completed before the flood of 1887, and its good effect has been very marked. There has been a concentration and deepening of channel throughout the reach, the bars being cut down 8 or 10 feet, with a material lowering of the high-water slope. It is expected this year to partially complete a levee on the opposite or right bank, with the object of cutting off any outflow in that direction also. The effect of these levees, combined with that of the contraction works at Plum Point, Bullerton, and Osceola, will probably soon cause the total disappearance of Plum Point Bar. Its improvement has been steady from year to year, as the concentration of scour cuts the channel down through the old deposits. During the last low water not less than 10 feet depth was found, and this only for a very short time. At extreme low water the depth was from 12 to 13 feet.

(For details of work, see report of Capt. S. S. Leach, Corps of Engineers, in charge of first district, Appendix C.)

SECOND DISTRICT.

(Foot of Island No. 40 to mouth of White River. Officer in charge, Capt. S. S. Leach, Corps of Engineers; headquarters, Memphis, Tenn.

The allotments for this district being exhausted at the end of the last fiscal year, an early allotment of funds was made immediately after the passage of the river and harbor bill of August 5, 1886, to enable the plant to be repaired.

Memphis Harbor.—Work at this point has been carried on with the specific appropriation of $57,250, made by the general act, and has consisted in extending the revetment of former years in front of the paved city levee. The total extent of this work is over 7,000 feet, and about 3,000 feet has been completed during the current season. There remains only a small gap of 600 feet, which will be filled this fall. This work has given entire satisfaction.

Below the paved levee the bank has of late years been caving, seriously threatening the railroad tracks and much valuable property. There being no immediate prospect that the necessary work of protection would be undertaken by the United States, the private parties interested raised the sum of $60,000 to carry out the work themselves. The district officer, Captain Leach, was put in charge of the work and the use of Government plant was authorized. The protection consists of a revetment in the form of five submerged spurs, projecting from the bank and extending from the high-water mark to the limit of scour. They are built of cribs filled with brush and stone, and rest on wide foot-mattresses of brush. The spurs cover a length of 2,200 feet of bank, and their effect has been good, the caving being reported as stopped. The method is substantially the same as that which has already given good results at New Orleans. It is understood that it is intended to put some short spurs between the main ones, to hasten deposit.

Memphis Reach.—The only work here is the revetment at Hopefield Point, for which an allotment has been made. The caving of the un-

protected part of Hopefield Point has continued, and 500 feet of the lower end of the revetment has been carried away. As soon as the river is low enough, the current allotment will be expended in repairing and continuing this revetment down-stream.

Levees.—In this district are embraced the levees of the Upper Yazoo and White River fronts. On the Upper Yazoo front the work done by the United States consisted mainly in strengthening and raising the levees at points where it was most needed, especially in that portion of the line lying between the Hushpucana and the Coahoma County line. By the united efforts of the United States and the State levee authorities, nearly the entire line was brought up to grade, 3 feet above high water of 1882, and was held during the flood of 1887.

Nothing was done on the White River front.

(For details of work see report of Capt. S. S. Leach, Corps of Engineers, in charge of second district, Appendix D.)

THIRD DISTRICT.

(Mouth of White River to Warrenton, Miss. Officer in charge, Capt. W. T. Rossell, Corps of Engineers; headquarters, Memphis, Tenn.)

Lake Providence Reach.—No work has been done in this reach beyond care of plant and carrying on surveys. An allotment of $270,000 was made by the Commission for work here, but the project for its expenditure was not approved by the Secretary of War. The dike work on the reach has been somewhat damaged, owing to the gradual decay of the piling; and the revetment at Pilcher's Point, after holding the bank through two great floods, in spite of its badly damaged and incomplete condition, has now substantially disappeared. The caving of the bank at Elton has allowed the Stack Island channel to split, a portion now going down the shore by Lake Providence. In consequence of this division the depth heretofore found here has diminished. There has also been heavy caving at Ben Lomond and at Wyly's, which will be detrimental unless soon checked.

Vicksburg Harbor.—As soon as the Commission could act on the appropriation of 1866, an allotment was made for some slight repairs needed by the revetment at Delta Point, and a survey was ordered of the harbor and vicinity, to enable the Commission to act on the special and conditional appropriation for work here made by the general act. As a result of this survey, a project was prepared by the district officer for dredging a basin in front of the city, and a canal thence to the river at Kleinston. It was also proposed to build a pile and brush dike across the harbor beyond the end of the basin, and also along the bar from De Soto Island to near the mouth of the proposed canal; the object of these two dikes being to cut off the eddy current which now flows into the harbor at high water and brings in the mud deposit. This project was not acted on at the end of the fiscal year, but has since been approved, and work will be begun as soon as the conditions are favorable.

Greenville Harbor.—For this work a special appropriation of $37,500 was made in the general act. This was not deemed sufficient by the Commission to begin the extensive work of bank protection required, and hence nothing was done during the year. Recently, however, the city has raised $50,000 to put into the work on condition that the expenditure of the appropriation be allowed. As this is deemed sufficient to warrant beginning the work, the Commission have given their approval, and the work will be undertaken at once. Submerged spurs will be used, as at Memphis and New Orleans.

Levees.—This district includes the levees on the Lower Yazoo front and the upper part of the Tensas front. In the former portion only a loop in the levee, rendered necessary by the caving at Ben Lomond, was constructed. On the Tensas front the levee from Amos Ridge to Arkansas City, which covers the head of the Tensas Basin, was partially constructed, being pushed under great difficulties, so as to keep out the flood of 1887, although from 12 to 18 inches higher than any known flood at this point. The reconstruction of the Panther Forest Levee from Gaines Landing to Linwood has been undertaken, but it is not yet completed, and the gap in the levee at Lelands has been closed.

In addition to the work mentioned, work under the supervision of the engineers of the Commission has been carried on by the State and county authorities of Arkansas and Louisiana, the allotments for this portion of the Tensas front, *i. e.*, above the Louisiana State line, having been made conditional on work being done by the parties mentioned, equal in extent to that done by the Commission, and under the supervision of its engineers. During the flood of 1887, considerable work was done in holding the levees, and no break of any magnitude occurred.

(For details of work see report of Capt. W. T. Rossell, Corps of Engineers, in charge of third district, Appendix E.)

FOURTH DISTRICT.

(Warrenton, Miss., to head of Passes. Officer in charge, Maj. C. W. Raymond, Corps of Engineers, to December 4, 1886; since that date, Capt. D. C. Kingman, Corps of Engineers; headquarters, New Orleans, La.)

New Orleans Harbor.—The last work done at this place had been the construction of a system of submerged spur-dikes, designed to stop the caving of the bank in Gouldsboro, Bend, opposite New Orleans. The results of this work appearing satisfactory, it was determined to carry the work on in continuance of the plan, with the special appropriation of $75,000 made by the general act of August 5, 1886. Of the whole number of spurs projected (six in all), two, viz, Nos. 2 and 3, had been entirely completed, and one (No. 5) partially so. During the past year two more spurs were built (Nos. 1 and 6), but the high water intervened before the unfinished No. 5 could be completed. This work has so far proved satisfactory, and it is proposed to continue it as fast as funds are supplied.

Rectification of Red and Atchafalaya rivers.—At the close of the last fiscal year the appropriation for this work was exhausted, and much anxiety was felt as low water approached lest the navigation through Old River should be stopped before funds were available to keep and channel open. As soon as possible after the passage of the river the harbor bill, arrangements were made for beginning work, and on August 17 the plant was on the ground. From this date until October 28 work was steadily pushed, the method being the same as in recent years, viz, scraping on the shoals and building small brush wing-dams at the wider places. The work was more difficult than ever, and the extent of shoal water greater. On September 29 the banks near Ash Cabin began to slide in, the bottom coming up in lumps which finally required blasting for their removal. The struggle was kept up for a month longer, when it was abandoned, and Old River remained impassable until the Mississippi River rose again.

Under the special appropriation for work at the head of the Atchafa-

laya, it was decided to begin the construction of the sills projected to check its further enlargement. These sills, six in number, are submerged brush-dams, placed at intervals of about one-fourth mile. They extend from high-water mark on one bank clear across the stream to high-water mark on the other bank. Their shape and height are so arranged that, while adequate width and depth are left for the passage of boats at low water, the high-water section is only intended to pass an equivalent of the flood-volume of Red River, viz, about 200,000 cubic feet per second. Surveys for the sites of these dams have been made, and plant for the work prepared. It is expected that one sill will be built during the coming season.

Levees.—This district includes the levees on the lower Tensas and Atchafalaya fronts. On the former front work was confined to repairs of the Kempe, Hard Times, and Greens to Fairview levees.

On the Atchafalaya front the Morganza levee was built by the State of Louisiana and the Commission; the latter allotting $40,000 for the work.

(For details of work in this district, see report of Capt. D. C. Kingman, Corps of Engineers, in charge of fourth district, Appendix F.)

GENERAL SERVICE.

All the steamers and barges belonging to this service were repaired, and such supplies of stone as were needed were furnished to the district officers. The fleet was wintered safely at Chester, Ill.

(For details of this work and general financial statement, see report of Lieut. James L. Lusk, secretary of construction committee, Appendix B.)

OPERATIONS FOR THE COMING SEASON.

The rigid interpretation of the restrictions in the river and harbor act concerning the use of bank protection narrows very materially the field of work open to the Commission. They do not deem it advisable to push any further the construction of contraction works while the restriction prevents the holding of banks, even where necessary to protect the contraction works themselves as well as to prevent further deterioration of the channel. Hence, work on the Plum Point and Lake Providence reaches will be confined to repairs to existing works. At Memphis the Hopefield revetment will be repaired and extended, and the Memphis revetment will be completed. At Greenville and Vicksburg work under the special projects, already described, will be carried on, as also at New Orleans and at the head of the Atchafalaya. All funds remaining available, over and above what is required for current repairs and for the care of plant, will be alloted to the construction of levees. It is expected that, with the assistance of local authorities, the Yazoo and Tensas fronts will be entirely closed, and progress will be made on the White River front. The local levees on Plum Point Reach will be extended.

FINANCIAL STATEMENT.

Appropriation for salaries and expenses, Mississippi River Commission.

Balance on hand July 1, 1886	$3,538.79
Expended from July 1, 1886, to June 30, 1887	37.65
Balance on hand July 1, 1887	3,501.14

Appropriation for surveys, Mississippi River.

Balance on hand July 1, 1886	$111.21
Appropriated, act of August 5, 1886	30,000.00
Total	30,111.21
Expended from July 1, 1886, to June 30, 1887	19,630.16
Balance on hand July 1, 1887	10,481.05

Appropriation for improving Mississippi River.

Balance on hand July 1, 1886	$115,871.50
Appropriated, act of August 5, 1886 (less $5,942.60, expenses office Chief of Engineers)	1,994,057.40
Received from sales	29.00
Total	2,109,957.90
Expended from July 1, 1886, to June 30, 1887	707,021.07
Balance on hand July 1, 1887	1,402,936.83

Estimate of funds for the Mississippi River Commission for the fiscal year ending June 30, 1889.

FOR SURVEYS AND EXPENSES.

For continuation of surveys of the Mississippi River between the head of the Passes, near its mouth, and its headwaters, now in progress; to make additional surveys and examinations and investigations, topographical, hydrographical, and hydrometrical as are necessary for maturing a plan for the permanent improvement of the entire river; and for salaries and traveling expenses of the Mississippi River Commission, and of assistant engineers under them, and for office expenses and contingencies $200,000

FOR IMPROVING MISSISSIPPI RIVER.

For continuing the improvement of the Mississippi River, from Cairo, Ill., to the head of the Passes, including the improvement of the Red River, at and below the head of the Atchafalaya	$5,000,000
For the improvement of the following harbors:	
Columbus, Ky	61,750
Hickman, Ky	251,750
Greenville, Miss	148,500
Vicksburg, Miss	282,500
New Orleans, La	608,600
For the protection of Lake Bolivar levee	150,000
	6,503,100

GENERAL OBSERVATIONS.

There are some features of that clause of the act of August, 5, 1886, containing the appropriation for the Mississippi River below Cairo, and some facts relative to the expenditure of that appropriation, to which attention is invited and which will require a somewhat extended explanation. The clause referred to is in these words:

Improving Mississippi River from Head of the Passes to the mouth of the Ohio River: Continuing improvement, $2,000,000; which sum shall be expended under the direction of the Secretary of War, in accordance with the plans, specifications, and recommendations of the Mississippi River Commission: *Provided*, That no portion of this appropriation shall be expended to repair or build levees for the purpose of reclaiming lands or preventing injury to lands or private property by overflows; *Provided, however*, That the Commission is authorized to repair and build levees, if, in their judgment, it should be done, as part of their plan to afford ease and safety to the navigation and commerce of the river and to deepen the channel; *And provided further*, That no works of bank protection or revetment shall be executed in said reaches or elsewhere until after it shall be found that the completion of the permeable contract-

ing works and uniform width of the high-water channel will not secure the desired stability of the river banks: *Provided, however*, That nothing herein contained shall prevent the construction of revetment works where the banks are caving at Greenville Reach, Delta Point, in front of the cities of Vicksburg, Memphis, Hickman, and Columbus; *And provided further*, That contraction works shall be built at the same time in the wide portions of the river immediately above the said revetment works.

Of the amount herein appropriated for the Lower Mississippi $75,000 are to be expended in continuing the work in progress at New Orleans, $187,500 for the rectification of the Red and Atchafalaya rivers by preventing further enlargement of the latter stream and restricting its outlet capacity, and for keeping open a navigable channel through the mouth of Red or Old River into the Mississippi; $37,500 in improving navigation in the Greenville Reach by preventing the bank at Greenville from further caving; $75,000 in deepening the channel at Vicksburg by dredging through the bar existing there; but this last-named sum shall not be expended unless, after another examination or survey, the Commission shall deem it advisable; and if they shall not, then $37,500 shall be expended in the improvement of navigation at Vicksburg by constructing suitable dikes and other appropriate works; and $56,250 in completing the work on the river at Memphis; also $18,750 for work on the river at Hickman, and $18,750 for work on the river at Columbus, Ky.

The Commission was at much loss to know how to execute this law. Its literal execution was impossible, as will appear clearly from the following facts:

As originally recommended, and so far carried on, the plan of improvement of the Mississippi River embraced three distinct kinds of work, viz:

(1) Contraction works for the purpose of closing chutes and narrowing the channel where necessary, for concentration of the low-water discharge.

(2) Revetment, or bank-protection works, for the purpose of preventing caving of the banks at points where such caving, if unchecked, would make it impossible to obtain the desired contraction of the low-water channel, or result in injurious changes of current direction below.

(3) Levees, designed to limit the high-water width of the river, and, by concentration of the flood discharge within the channel, secure its deepening and enlargement by scour.

This plan was fully set forth and explained in the early reports of the Commission, and received the approval of Congress. It was followed consistently in the expenditure of all appropriations preceding the last. In this the proviso appeared which is quoted above, imposing a conditional limitation upon the use of works for revetment or bank protection. This proviso forbids the use of bank protection anywhere "until after it shall be found that the completion of the permeable contracting works and uniform width of the high-water channel will not secure the desired stability of the river banks."

Literally construed, this was a direction by Congress to stop one branch of the work embraced in the general plan heretofore followed, and go on with the other two to completion first. The "uniform width of the high-water channel," referred to in the proviso, is a thing attainable only by the completion of a general levee system—a work requiring many years and large sums of money for its execution. The object of the permeable contracting works is to narrow the channel. There is a theory afloat in the world that a stream whose channel is regulated in width will not erode its banks. And the plain meaning of this proviso in requiring that no bank protection should be used until after it should be found that the regulation of low-water width by contraction works and high-water width by levees "will not secure the desired stability of the river banks," is that this theory shall be applied to the Mississippi River. But this would require, not only the completion of a general levee system, but the completion of a general contraction system through-

out the river or a large part of it. The channel is already narrow in many places; but the banks cave, nevertheless. That this caving can be stopped by narrowing the channel in a few more places is impossible to suppose. The theory referred to rests upon an assumption of general regulation of width, and consequent general uniformity of velocity and sediment charge. It would have been sufficient to disincline the Commission to try so stupendous and costly an experiment, without first laying the subject fully before Congress, that it is, in the opinion of the Commission, utterly visionary and hopeless. But the experiment is one which is impossible even to try. Five years' experience in Lake Providence Reach warrants the statement that it is impossible to narrow the low-water channel in that reach through permeable contracting works alone, by any expenditure of money or continuance of work. The works may be constructed and deposits secured by the thousand acres, but unless held to its place at certain points of impingement, the current will run away from these and leave them utterly useless and ineffectual.

A subsequent proviso of the clause quoted permits the use of revetment at certain places named, viz, Greenville, Delta Point, Vicksburg, Memphis, Hickman, and Columbus; but with the further provision that "contraction works shall be built at the same time in the wide portions of the river immediately above the said revetment works." The work of bank protection proposed at these places was not for the deepening of the channel, but for the preservation of harbors. There is no wide place immediately above either of them which requires contraction for the improvement of the channel. Such works would cost many times the amounts estimated for the revetments proposed in the harbors. The entire sum appropriated by the act for the river below Cairo was $2,000,000. Of this, $468,750 was required to be expended in specified works at New Orleans, Red River, Greenville, Vicksburg, Memphis, Hickman, and Columbus, leaving $1,531,250 to be allotted by the Secretary of War upon the recommendation of the Commission. That sum was insufficient for the construction, or even commencement, by advantageous methods, of works of contraction at the wide places above the harbors named. So that, upon a literal interpretation, that part of the act also was impossible of execution.

In this dilemma, the Commission sought first to give effect to the beneficial purpose of the law by a somewhat liberal interpretation of its language. It was considered not beyond a fair construction of its terms, in view of its manifest object, to take it to mean, not that all works of bank protection should be excluded from the channel improvement until its total failure had demonstrated their necessity, but that revetment might be employed, not as an original means of improvement, but as an adjunct to the contraction works, where its absolute necessity was as plainly to be seen beforehand as it could be after the destruction of the works. At its meeting on September 20, 1886, the Commission recommended to the Secretary of War an allotment of $377,250 for continuance of work in the Plum Point Reach, and $300,000 for continuance of work at the Lake Providence Reach. At the same time the following resolution was adopted by the Commission and forwarded to the Secretary of War with the recommendations:

Resolved, That the Commission, in making the allotments of to-day, have assumed that in the Plum Point and Lake Providence reaches only those revetments should be built which, in the opinion of the Commission, are indispensable to preserve the improvement in the channel already gained, and to repair and preserve the work already done, and have assumed that this is the intention of the law; but if the intention of the law is thought to prevent in these reaches the construction of any revetment whatever, then the Commission would recommend that the allotments made for the

reaches named be not at present expended, save in so far as to secure existing works from further damage.

The allotment for the Lake Providence Reach was approved by the Secretary of War November 11, 1886, and that for Plum Point November 16, 1886. At its meeting on November 27, 1886, the Commission adopted projects for the expenditure of these allotments in the continuation of work in these reaches. The project for Plum Point embraced, among other work, the extension of an unfinished revetment in Fletcher's Bend, and that for Lake Providence the repair and extension of an unfinished revetment at Pilcher's. Both these works are shown and described in former reports of the Commission, and they were both regarded as essential to the maintenance of the contraction works and permanence of the improved channels in those reaches. These projects were transmitted to the Secretary of War with the following letter:

OFFICE OF MISSISSIPPI RIVER COMMISSION,
Saint Louis, Mo., November 27, 1886.

SIR: The river and harbor act of August 5, 1886, imposed on the Mississippi River Commission the condition—

"That no works of bank protection or revetment shall be executed in said reaches or elsewhere until after it shall be found that the completion of the permeable contracting works and uniform width of the high-water channel will not secure the desired stability of the river banks."

This limitation is based, it is believed, on the theory that a river, if once regulated, will not scour its natural banks. The Commission is somewhat familiar with the opinions and writings of hydraulic engineers, and, so far as it is advised, this theory is totally unrecognized by any authoritative writer on hydraulics. It is universally recognized by such writers that, in general, when a large obstruction is placed on one bank of a river a corresponding wearing away of the opposite bank occurs in consequence. There is no evidence that a regulated river will not cave its banks, and in most cases it is impossible to build permeable contracting works or secure any narrowing of the channel by them without holding the banks in their immediate neighborhood while the work is going on. The unprotected banks would recede while the contracting works were being built. These general views are fully confirmed by the experience of the Commission on the Mississippi River.

The contraction works at Gold Dust, Plum Point, Duncansby, and Baleshed have been followed by caving on the opposite bank, whose immediate result is, by again enlarging the cross-section of the river, to destroy any beneficial results the contraction works might otherwise produce. That such works may secure any valuable permanent contraction, the opposite bank must in general be held by protection works.

In the opinion of the Commission the idea that the Mississippi River can be permanently improved by contraction works alone is purely visionary and theoretical, contradicted by experience and not supported by any good authority. To adopt such a system is, in the opinion of the Commission, to waste public money. Holding these views, the Commission, as engineers, can not recommend to Congress so futile an undertaking.

In the work which has been done in the Plum Point and Lake Providence reaches the plan which has been so frequently and explicitly recommended by the Commission in previous reports, and which embraces the combination of permeable contracting works and bank protection as means of narrowing and deepening the channel, has been applied. The work has been conducted under difficulties which can justly be called extraordinary. Since its commencement a succession of floods have occurred, without precedent, by which the work has been greatly interfered with and large expense and losses incurred. On two occasions the annual appropriation has failed entirely, and in no case except one has it reached the amount recommended. During long intervals of time the works have remained in an unfinished condition, exposed to injuries which under favorable conditions might have been prevented.

Nevertheless, the deepened channel through the improved portions of these reaches has been maintained continuously. The present season has been one of extraordinary low water—the lowest since 1879. In many parts of the river the depth has fallen to 6 feet and under, but in the improved parts of these reaches there has been at all times a navigable channel of ample depth. Before these works were begun these reaches were the worst places on the river. It was for that reason that their improvement was undertaken first in order. They are now good.

These successful and gratifying results have been obtained by the combination of permeable contracting works and bank protection, each supplementing and aiding

the other, and, in the opinion of the Commission, could not have been obtained by permeable contracting works alone. In the act of August 5, 1886, certain restrictions already referred to, not entirely free from ambiguity, are laid upon the use of bank protection or revetment as means of channel improvement. In the recommendations made for the expenditure of this appropriation, the Commission have regarded these restrictions, and have recommended no work of bank protection or revetment that does not seem to them to be absolutely necessary to save from destruction costly work already done or valuable results already obtained, leaving to yourself, at the same time, the final question of the full meaning and intent of the law.

The Commission would call attention to the fact that, Congress having failed at its last session to make any provision for payment of its expenses, and the Attorney-General having decided that such expenses could not be paid from the appropriation, it has been impossible to make such inspections of the work as are much to be desired. The Commission would also call attention to the fact that the works at Plum Point and Lake Providence have seriously deteriorated during the absence of appropriations for carrying them on, and hence that the appropriations asked for in the annual report should be granted, as the works in those reaches are still incomplete and funds are not available for their completion.

Q. A. GILLMORE,
Colonel of Engineers,
Bvt. Maj. Gen., U. S. A.,
President Miss. River Commission.
C. B. COMSTOCK,
Lieut. Col. Engineers, Bvt. Brig. Gen., U. S. A.
CHAS. R. SUTER,
Major of Engineers, U. S. A.
HENRY MITCHELL,
Coast and Geodetic Survey.
B. M. HARROD.
R. S. TAYLOR,
S. W. FERGUSON.

The SECRETARY OF WAR.
(Through the Chief of Engineers.)

This letter was laid before Congress by the Secretary of War January 25, 1887, but no action was taken upon it of which the Commission is advised. The projects recommended were not approved by the Secretary.

At its meeting held July 2, 1887, the Commission adopted the following resolutions:

(1) *Resolved,* That in view of the non-approval by the Secretary of War of certain of the projects for the improvement of the Mississippi River, under act of August 5, 1886, recommended by the Commission at its meeting in November, 1886, the Commission feels compelled to regard those recommendations so remaining non-approved as disapproved, although no express action to that effect has been communicated to the Commission; and that it is the judgment of the Commission that all recommendations so remaining unapproved should be withdrawn, and new recommendations made for the allotment and expenditure of money covered by said recommendations in other parts of the work clearly authorized by said act, and within the general plan of improvement adopted by the Commission and approved by Congress.

(2) That the judgment of the Commission is that, until further action on the subject by Congress, no work should be done in the channel, except such repairs of existing works as will protect the same from injury; and that so much of the appropriation made by said act not required by its terms to be expended for specific improvements therein named as shall not be needed for such repairs and for the care of plant should be allotted to the construction or repair of levees in those localities where they will contribute most effectually to the improvement of navigation by uniform width of high-water channel.

(3) That the district officers now present be directed to prepare immediately projects for their respective districts, comprising only such work as will be in their judgment necessary and sufficient to protect the works already constructed from injury and provide for the care of plant until the close of the present fiscal year.

The projects prepared by the district officers in obedience to the last of these resolutions showed a balance of $531,140, after providing funds sufficient to protect the works already constructed and for the care of plant to the close of the fiscal year. The Commission then recom-

mended that this sum be allotted to the construction of levees. The entire allotments made to that part of the work out of the appropriation were as follows:

At meeting of September 20, 1886	$400,000
At meeting of November 27, 1886	100,000
At meeting of July 2, 1887	531,140
Total	1,031,140

All these allotments were approved by the Secretary of War.

Except for the restrictions and directions contained in the provisos to which reference has been made, the Commission would have regarded the first allotment of $400,000 as a suitable portion of the entire appropriation to be expended in the construction of levees. But the language of the act, literally construed, was an express direction to complete, or at least go forward with, that part of the work directed by the act which was clearly practicable, and omit that part which was believed to be impracticable until Congress could take further action on the subject. And this was the course taken.

It may be said further that the time is opportune for pushing the levee work with vigor. The full benefit to be expected in the improvement of the channel by concentration of the flood discharge can not be realized without complete closure of long lines of alluvial front. In the early reports of the Commission it was recommended that the closure of the Yazoo and Tensas basins be taken as objective points, and that end has been kept in view throughout the work. In expenditures for the construction of levees the Commission has, as a rule, sought the co-operation of the State and the local authorities and private citizens interested. This course has stimulated the people of the alluvial valley to the most strenuous exertion. The total allotments for levees made by the Commission since its organization, out of the appropriations made by Congress, may be stated in round numbers at $2,600,000. The Commission is not in possession of exact information as to the amount expended in like work, during the same time, by the local authorities and citizens, but estimates the sum approximately at $4,350,000. By means of this co-operation the Yazoo front has been closed, the lines requiring, however, some additions and strengthening before they can be regarded as complete; and the work on the Tensas front is so far advanced that it is hoped that another season will suffice for its completion. The past year has witnessed a great awakening of enterprise in the Yazoo and Tensas basins, stimulated in part, no doubt, by the prospect of protection against overflow, and which in turn will create means and motives for the protection and preservation of the levees constructed. So that, considering it to be part of the plan of improvement that the levees shall be built and maintained for the betterment of the channel, as has been constantly recommended by the Commission, and as is declared in the act last passed, and to be to the interest of the Government that as large a share of the cost as possible shall be paid by the local authorities or the people, it is clear that the present is a favorable time for pressing the work.

The convictions expressed by the Commission in its letter to the Secretary of War, touching the futility of an attempt to improve the river channel by levees and contraction works alone, are still entertained, and have been strengthened by the experience of the present season. It would be impossible for works of improvement to operate more successfully than have those at Plum Point Reach. The regulated channel has maintained its width and depth and the current its location

and direction, with no substantial variation. These results have been obtained by permeable contraction works and works of bank protection combined. They could not have been obtained by either alone. The Commission believes that it would be impossible for any intelligent man to go to the reach and look at what has been done and the results which have been achieved without seeing clearly that that part of the work which has operated, like the key of an arch, to hold all other parts in place has been the revetment in Fletcher's Bend.

At Lake Providence Reach as great depth of channel has been obtained as at Plum Point, but the channel has not retained its location and direction as steadily, and in the present situation there is less promise of permanence of the good results obtained. This is accounted for by the fact that the revetment work in that reach is less complete and has suffered more injury, and that there has been, in consequence, more caving of bends and more shifting of the channel.

The practical execution of works for bank protection upon such large scale and in situations so difficult as those found on the Lower Mississippi was at the beginning a problem transcending the experience of engineers. There was no road to success except by experiment. Since then much valuable experience has been gained, improved methods of construction have been devised, better results have been obtained, and the cost, considering the results, lessened. The form of revetment mostly employed consists of continuous mattress under water, and graded bank, grillage, and stone covering above the low-water line. At New Orleans a revetment has been employed, consisting of submerged spurs placed against the caving bank. This form was cheaper than a continuous mattress would have been at that place, and appears so far to be successful. At the lower portion of the Memphis city front a revetment has been constructed consisting of detached spurs extending to high-water mark. This was more expensive than a continuous mattress would have been at the same place; but in the situation there presented, the bank to be protected being at the foot of a high, crumbling bluff, the spurs seemed to be the better form. This work was done under the direction of Capt. S. S. Leach, the district officer in charge, but mainly at the expense of private citizens. It has passed through one flood without injury and gives every promise of permanent success.

These three forms of revetment—the continuous mattress, the submerged spur, and the spur extending to high-water line—are all that have been tried. A fourth form is possible, consisting of discontinuous mattresses placed at intervals against the bank. It is possible that in some situations this would be found practicable and economical; but it is to be remembered that in such constructions as these experiments in search of cheapness are themselves very expensive.

The Commission is not unaware of the grave responsibility which it assumed in declining to recommend the execution of work in the form contemplated in the proviso found in the act of August 5, 1886; but the Commission was then of the firm opinion, and still is, that the prohibition of all bank protection makes the work of improvement by regulation of the low-water channel impossible. Holding these views, the Commission would be wanting in the faithful discharge of duty if it should fail to urge upon Congress a reconsideration of the subject. It it particularly to be regretted that such a change should be proposed in the conduct of work in the Plum Point and Lake Providence reaches. In these the work done has been a combination of contraction and revetment. It has been successful in the highest degree. It is now near completion. In the absence of unlooked-for disaster, and by prompt

resumption of work with sufficient means, it is believed that $250,000 will suffice to complete the work undertaken at Plum Point and $1,500,000 that at Lake Providence; and against a change of plan at this time, which it is believed will imperil all the good results attained in those difficult reaches, the Commission feels compelled to protest with all the earnestness which is consistent with the respect due to the superior wisdom and authority of Congress.

IMPROVEMENT OF BAYOU PLAQUEMINE.

There is one measure of partial relief to the commerce of the Atchafalaya which may also be of some value to the commerce of Red River, while works for its more complete improvement are going on, which the Commission recommends to the attention of Congress. It is the opening of the Bayou Plaquemine from its junction with the Atchafalaya to the town of Plaquemine, on the Mississippi. There is a considerable and growing commerce in the Atchafalaya Basin, which finds its present outlet into the Mississippi by way of Old River. It is not to be expected that that outlet can be kept open at low water until improvements can be completed that will require several seasons for their finishing. If that commerce could have access to the immediate bank of the Mississippi at Plaquemine it would not be entirely suspended by the closure of Old River; and until the proposed new channel north of Turnbull's Island is developed, it would be some relief to the Red River trade to be able to reach the Mississippi at Plaquemine when Old River is shut up. The expense of such improvement of the Bayou Plaquemine and its connections as would suffice for this purpose would not be great. From information gathered from personal inspection and other sources, the Commission is of the opinion that $40,000 would secure the advantages proposed. If such an improvement is to be undertaken at all, it is very desirable that it shall be completed before the next low-water season, which could not be accomplished after the passage of an appropriation bill at the coming session of Congress in the ordinary course of business. The Commission recommends, therefore, that the Secretary of War be authorized to use at his discretion not exceeding $40,000 of money heretofore appropriated for work in the Atchafalaya and Red rivers, or for the improvement of the Mississippi River below Cairo, in the improvement of Bayou Plaquemine.

Q. A. GILLMORE,
President Miss. River Comm.,
Colonel of Engineers, Brt. Maj. Gen.
CHAS. R. SUTER,
Lieut. Col. of Engineers, U. S. A.
B. M. HARROD.
R. S. TAYLOR.
S. W. FERGUSON.

The SECRETARY OF WAR,
(Through the Chief of Engineers.)

I am not of the opinion that levees can be used either with economy or usefulness to improve the low-water navigation of the Mississippi River; hence, under the proviso of the river and harbor bill of August

5, 1886, "that no portion of this appropriation shall be expended to repair or build levees for the purpose of reclaiming lands or preventing injury to lands or private property by overflows," I do not concur in the advisability, under the law, of spending on levees nearly two-thirds of the appropriation not limited to specific points.

The value of levees as a means of improving low-water navigation has been much discussed, and some results of experience are very desirable. At Plum Point a levee was built in 1886–'87, which, in the high water of 1887, turned into the river a large amount of flood-water which before had escaped over Plum Point. A cutting down of shoals and enlargement of section in consequence is reported, and was to have been expected. But the question at issue is whether such confinement of flood-waters increases in a marked degree the navigable low-water depths on the *shoalest crossings*. Prior to the construction of the levee, the least depths on the Plum Point crossing had been for some years oftener over than under 9 feet, sometimes reaching 10 or 12 feet. Yet on October 27, 1887, the depth on the Plum Point crossing was but 9 feet, this being eight months after the completion of the levee. The river was very low (—0.5 on the Plum Point gauge), but as the contraction works alone might have cut down the bar to this depth, evidence that this levee has improved navigation is wanting.

The Commission estimate the cost of completing the work in the Plum Point and Lake Providence reaches at $250,000 and $1,500,000, respectively. Even if work were to be confined to the 14 miles at Plum Point, and to the 19 miles at Lake Providence, to which previous work has been mainly confined, I deem these sums much too small. A reach can be considered completely or permanently improved only when its works have been carried so far that the reach and its works are safe for many years against changes within its limits, and when the only danger of any serious injury is from an attack at the upper end of the works by the unregulated river above them. To stop short of this is to increase steadily the amount of work annually destroyed by the river itself.

C. B. COMSTOCK,
Lieut. Col. of Engrs., Bvt. Brig. Genl.

NEW YORK, *December* 9, 1887.

I concur in the above report, except as regards the building of extended levees as means of improving navigation. Our experience with levee construction has led me to the conviction that no general or very extensive system of levees for the Lower Mississippi River would form part of a proper plan for the deepening of the low-water channel at those "crossings," comparatively few, at which there is now less water in the low-river season than commerce requires. I can not, therefore, concur in the statement that "the other branch of the work directed by the act, consisting of levees designed to secure uniform width of the high-water channel, is of such nature that it can be carried forward to any extent in advance of other work, with economy and usefulness."

HENRY MITCHELL.

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APPENDICES.

APPENDIX A.

ANNUAL REPORT OF THE SECRETARY OF THE COMMISSION UPON THE WORK OF SURVEYS AND EXAMINATIONS.

OFFICE MISSISSIPPI RIVER COMMISSION,
2828 WASHINGTON AVENUE,
St. Louis, Mo., July 25, 1887.

GENERAL: I have the honor to submit the following report of operations under the appropriation for "surveys of the Mississippi River" during the fiscal year ending June 30, 1887.

No field work has been done except the regular trips of the gauge-inspector.

Work was entirely suspended until August 6, when the passage of a river and harbor bill enabled my predecessor, Captain Turtle, to employ assistants and others and resume the office work and reductions. The conventional sign work was completed on detail charts below Cairo; 16 sheets, Cairo to Caruthersville having been done during the year, and the printed signs on 24 sheets retouched. Special maps of Plum Point and Lake Providence reaches, called for by the Commission, to show bank-lines to date and illustrate the effect of contraction works upon adjacent caving banks, were prepared.

The "alluvial map," showing areas of overflow and contours of basins, was completed and published. Sheets 1, 2, 3, and half of 4, of the second edition of the 1 inch to 1 mile series of charts, which contain the extended topography of the later surveys, were drawn and preliminary work was done on 5, 6, and 7.

The chart of high-water regimen and the tables of the elements of bank-full and mean-stage sections have been completed and the diagram blue-printed.

The reduction and tabulation of the results of discharge observations in 1885-'86 have been completed. A large amount of other work has been done in the way of consolidations, tabulations, and arrangement of data for publication or ready reference, and in clerical and miscellaneous work consequent upon calls for information from officers and the public.

From lack of funds the force is now so reduced that but little progress can be made towards bringing into shape for use the mass of information now awaiting discussion. That funds should be liberally supplied to enable the compilation of data and the publication of maps to proceed, is a necessity that can not be too strongly emphasized.

The information now on hand in undigested form, or in original copies, subject to destruction by fire or damage by exposure and decay, represents an expenditure of several hundred thousand dollars, which can not be utilized or put beyond danger of entire destruction until further appropriations are made. They should be made for the reasons here given and without reference to any future policy or prospects.

A table of value of plant and financial statements are herewith.

For list of civilian engineers employed see my report for the first district.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers,
Secretary Mississippi River Commission.

General Q. A. GILLMORE,
President Mississippi River Commission.

Appropriation for surveys Mississippi River.

FINANCIAL STATEMENT.

Balance July 1, 1886, from appropriation July 5, 1884	$111.21
Appropriation, act of August 5, 1886	30,000.00
Total	30,111.21
Expended from July 1, 1886, to June 30, 1887	19,630.16
Balance June 30, 1887	10,481.05

General balance sheet.

1886. July 1	To balance from appropriation, July 5, 1884	$111.21	1887. June 30	By amount expended from July 1, 1886, to June 30, 1887	$19,630.16
	To appropriation act of August 5, 1886	30,000.00		By balance	10,481.05
	Total	30,111.21		Total	30,111.21

Itemized statement of expenditures for Mississippi River Commission, act of July 7, 1884.

Items.	Car tickets.	Washing.	Gas.	Water rates.	Telegrams.	Total.
Office	$5.00	$3.00	$1.80	$25.00	$2.85	$37.65

SUMMARY.

Balance July 1, 1886		$3,538.79
Expended during fiscal year	$37.65	
Liabilities	3,490.95	
		3,528.60
Balance available		10.19

SMITH S. LEACH,
Captain of Engineers,
Secretary Mississippi River Commission.

Itemized statement of expenditures of surveys of Mississippi River, act of August 5, 1886.

Items.	Services.		Outfit.	Supplies.	Rent.	Fuel.	Repairs.
	Assistant engineers, clerks, etc.	Draughtsmen and gauge keepers.					
Office	$6,541.59	$31.09	$2.70	$71.16	$975.00	$218.54	$12.03
Reduction and publication	5,605.26	1,253.08	33.22	387.22	.....	.....	.....
Inspection, etc., of gauges	1,004.17	1,070.90	.....	59.71	.....	.....	6.85
Field work of topography	200.00	33.00	.....	.....	.....	.....	.....
Care of property	.....	125.00	.....	.....	.....	.....	.....
Total	13,951.12	2,513.07	35.92	518.09	975.00	218.54	25.88

Itemized statement of expenditures of surveys of Mississippi River, etc.—Continued.

Items.	Transportation.	Traveling expenses.	Miscellaneous.	Furniture.	Periodicals.	Stationery.	Mileage.	Total.
Office	$23.50	$1.25	$122.60	$93.85	$15.50	$317.91	$292.80	$8,726.82
Reduction and publication	23.10	5.00	58.38					7,365.26
Inspection, etc., of gauges	20.15	294.50						2,456.28
Field work of topography	5.00		71.50					309.50
Miscellaneous surveys								*600.00
Care of property								125.00
Total	71.75	300.75	252.68	93.85	15.50	317.91	292.80	19,582.86

* Expended by Capt. Dan. C. Kingman, Corps of Engineers, in survey of Morganza.

SUMMARY.

Balance from appropriation of July 5, 1884		$111.21
Appropriated by act of August 5, 1886		30,000.00
Total		30,111.21
Expended for fiscal year ending June 30, 1887	$19,582.86	
Reserved by Chief of Engineers, for expenses in his office on account of appropriation	47.30	
		19,630.16
Balance available		10,481.05

SMITH S. LEACH,
Captain of Engineers,
Secretary Mississippi River Commission.

Approximate value of plant belonging to the United States and used by the Mississippi River Commission in surveys and examinations of the Mississippi River.

[Appropriation for Mississippi River Commission.]

Class of property.	Approximate value June 30, 1887.
One steamer, *Patrol*	$11,200.00
Three launches, Nos. 1, 3, and 4	4,000.00
One steam-tug, *Frolic* (wrecked during the year)	200.00
Six quarter-boats	9,600.00
Skiffs, etc	350.00
Outfit	3,200.00
Tools and appliances	640.00
Surveying instruments	12,000.00
Drawing instruments	700.00
Office furniture	800.00
Printing press, etc	280.00
Current meters and outfit	1,520.00
Total	44,490.00

[Appropriation for surveys of Mississippi River.]

Three launches, Nos. 5, 6, and 7	$6,000.00
Current meters and outfit	640.00
Outfit	160.00
Tools and appliances	80.00
Total	6,880.00

SMITH S. LEACH,
Captain of Engineers,
Secretary Mississippi River Commission.

A 1.—*Geographical positions of triangulation points in the vicinity of Cairo, Ill., established by the United States Lake Survey in* 1876.

Station.	Latitude.	Longitude.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″		*Meters.*
North base	37 02 21.94	89 11 31.84	34 11 56.27	214 11 19.37	Missouri	2,695.1
			352 32 01.98	172 32 07.19	South base	1,646.8
Greenfield	36 59 01.67	89 11 51.26	188 41 15.60	8 41 32.47	....do	4,563.4
			294 21 07.77	114 22 15.44	Bird's Ferry	3,054.7
Missouri	37 01 09.62	89 12 33.12	250 57 39.97	70 58 22.07	South base	1,828.7
South base	37 01 28.97	89 11 23.19	318 27 21.26	138 28 28.41	Defiance	4,158.6
			264 43 48.81	84 44 40.51	Ohio	2,131.2
Ohio	37 01 35.31	89 09 57.33	121 36 43.98	301 35 47.06	North base	2,742.8
			349 08 08.73	169 08 24.19	Defiance	3,368.8
Defiance	36 59 47.99	89 09 31.65	67 32 36.97	247 31 12.97	Greenfield	3,735.9
			262 21 21.35	82 22 01.31	Ferguson	1,656.8
Bird's Ferry	36 58 20.80	89 09 58.75	193 59 51.66	14 00 07.98	Defiance	2,770.1
			244 18 25.65	64 19 36.36	Bird's Point	3,225.3
Bird's Point	36 59 06.14	89 08 01.23	119 59 14.83	299 58 20.42	Defiance	2,581.5
			319 18 56.70	139 19 31.55	Price	2,198.3
Ferguson	36 59 55.14	89 06 25.25	338 31 49.53	158 32 03.99	Bird's Point	1,622.8
			296 08 41.07	116 09 39.01	Fillmore	2,652.4
Fillmore	36 59 17.21	89 06 48.97	79 12 01.00	259 11 17.52	Bird's Point	1,819.4
			10 00 36.70	190 00 28.08	Price	2,039.3
Price	36 58 12.06	89 07 03.30	355 04 44.57	175 04 49.24	Maybee	2,238.6
			290 19 44.18	110 20 20.94	Willow Creek	1,612.1
Willow Creek	36 57 53.89	89 06 02.19	38 19 18.24	218 18 46.17	Maybee	2,128.7
			155 45 12.41	335 44 44.27	Fillmore	2,817.0
Maybee	36 56 59.71	89 06 55.54	312 01 06.02	133 01 39.19	Island No. 1	1,838.5
Island No. 1	36 56 19.79	89 06 00.34	179 05 49.29	359 05 48.18	Willow Creek	2,901.3

A 2.—*Geographical positions from Mound City, Ark., to Helena, Ark.*

Barton	35 12 16.53	90 06 03.23	12 41 01.52	192 40 46.26	Mound City	3,052.4
			311 23 56.82	131 24 59.54	Frame's Chute	3,669.6
Frame's Chute	35 10 57.76	90 04 14.43	80 52 08.74	260 50 50.79	Mound City	3,457.0
			9 20 47.91	189 20 40.67	Hopefield	1,962.0
Mound City	35 10 39.88	90 06 29.73	294 02 03.69	114 03 14.37	do	3,399.7
Hopefield	35 09 54.93	90 04 27.02	258 29 58.19	78 30 36.98	Wolf River	1,739.3
Wolf River	35 10 06.18	90 03 19.66	138 55 24.38	318 54 52.83	Frame's Chute	2,108.5
			00 18 16.48	180 18 16.16	Memphis	2,660.3
Memphis	35 08 39.85	90 03 20.22	143 51 05.45	323 50 26.99	Hopefield	2,865.4
			39 58 26.91	219 57 55.32	Peterson	2,162.9
Peterson	35 07 46.06	90 04 15.11	167 43 49.62	347 43 42.84	Vance, sr	1,403.9
			84 31 19.91	264 30 32.47	Vance, jr	2,096.9
Vance, sr	35 08 30.58	90 04 26.90	48 41 32.64	228 40 51.97	Vance, jr	2,381.5
			260 22 56.24	80 23 34.62	Memphis	1,711.7
Vance, jr	35 07 39.56	90 05 37.57	58 50 57.68	238 50 17.79	Davis	2,051.2
			104 38 39.78	284 37 30.22	Bayou	3,162.4
Forrest	35 06 41.10	90 05 20.36	219 31 16.78	39 31 54.31	Peterson	2,595.4
			166 24 23.98	346 24 14.08	Vance, jr	1,853.4
Davis	35 07 05.13	90 06 46.91	288 39 35.69	108 40 25.47	Forrest	2,312.9
			82 02 52.17	262 01 56.50	Crawford	2,474.2
Bayou	35 08 05.49	90 07 38.44	324 57 05.62	144 57 35.27	Davis	2,272.2
			73 53 03.93	253 52 06.36	Lake	2,636.4
Crawford	35 06 54.00	90 08 23.68	207 28 09.50	27 28 35.53	Bayou	2,482.9
			185 56 19.70	5 56 26.43	East base	2,862.7
Lake	35 07 41.73	90 09 18.49	316 39 51.46	136 40 22.99	Crawford	2,021.9
			35 04 56.16	219 04 27.59	Appersen	1,994.1
East base	35 08 26.40	90 09 11.98	76 24 18.23	256 23 29.56	West base	2,202.0
West base	35 08 09.59	90 10 36.53	321 37 30.36	141 38 12.27	Crawford	2,971.2
Appersen	35 06 51.50	90 10 07.14	268 19 06.09	88 20 06.17	....do	2,645.9
			13 27 42.69	193 27 28.36	Jones	2,711.4
Leadbetter	35 06 08.40	90 09 31.28	144 54 34.89	324 54 13.69	Appersen	1,623.4
			230 36 11.69	50 36 50.57	Crawford	2,214.8
			3 12 27.98	183 12 23.37	Ensley's	2,626.7
Jones	35 5 25.92	90 10 33.06	230 5 10.46	50 5 45.98	Leadbetter	2,039.7
			10 15 06.97	190 14 56.12	Mathews	2,687.3
Ensleys	35 4 10.88	90 9 39.29	149 30 23.87	329 29 52.97	Jones	2,663.7
			23 56 19.16	203 56 .65	Fleece	2,012.5
Mathews	35 4 .11	90 10 51.94	259 46 06.22	79 46 47.96	Ensleys	1,870.3
			32 53 09.13	212 52 43.96	Reeves	2,045.2
Fleece	35 3 11.19	90 10 11.52	145 48 37.65	325 48 14.43	Mathews	1,822.4
			35 28 54.14	215 28 16.06	Watson's	2,896

Geographical positions from Mound City, Ark., to Helena, Ark.—Continued.

Station.	Latitude.	Longitude.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″		*Meters.*
Reeves	35 3 4.37	90 11 35.77	264 22 12.86	84 23 1.24	Fleece	2,145.1
			49 8 47.36	229 8 6.09	Harris	2,412.8
Watson's	35 1 54.65	90 11 17.84	168 3 42.66	348 3 32.36	Reeves	2,195.7
			50 50 5.85	239 49 23.77	Horn Lake	2,149.7
Harris	35 2 13.13	90 12 47.81	284 00 18.30	104 1 9.94	Watson's	2,350.1
			86 24 37.11	266 23 59.73	Patterson's	1,653.2
Horn Lake	35 1 19.59	90 12 30.17	165 39 10.07	345 39 .52	Harris	1,702.5
			94 19 37.16	294 18 3.86	Rock Chute	4,132.1
Patterson's	35 2 9.75	90 13 52.91	306 43 00.63	126 43 47.55	Horn Lake	2,585.1
			89 14 26.84	269 13 5.69	Scanlan's	3,582.7
Rock Chute	35 1 29.67	90 15 13.71	238 54 15.66	58 55 2.06	Patterson's	2,391.5
			91 32 16.40	271 30 55.96	Collins	3,553.9
Scanlon's	35 2 8.14	90 16 14.26	307 42 37.50	127 43 20.50	Rock Chute	1,940
			18 11 1.66	198 10 36.70	Cow Island	3,534
Collins	35 1 32.71	90 17 33.87	241 34 12.46	61 34 58.16	Scanlan's	2,294.4
			13 11 17.97	193 11 4.84	Cow Island Bend	2,546.2
Cow Island	35 0 19.18	90 16 57.76	157 59 56.00	337 59 35.27	Collins	2,443.5
			345 20 13.77	165 20 30.02	State Line	2,839.8
Cow Island Bend	35 0 12.26	90 17 56.78	261 52 26.62	81 53 .49	Cow Island	1,511.7
			345 28 46.92	165 28 57.82	Fairview	1,923.2
Fairview	34 59 11.84	90 17 37.76	206 02 58.82	26 3 21.77	Cow Island	2,310
			322 4 8.43	142 4 48.11	McConnell	2,856
State Line	34 58 50.03	90 16 29.40	111 11 38.52	291 10 59.33	Fairview	1,859.2
McConnell	34 57 58.73	90 16 28.55	179 12 48.71	359 12 48.22	State Line	1,581
			277 50 17.71	97 50 53.75	Nelmo	1,610
			334 35 51.31	154 36 4.93	Cat Island Chute	1,406
Nelmo	30 57 51.60	90 15 25.67	138 5 14.05	318 4 37.52	State Line	2,449.7
Cat Island Chute	34 57 17.51	90 16 4.78	228 21 38.33	48 22 .74	Nelmo	1,444.7
			304 47 13.93	124 48 2.15	Harcklerode	2,600.9
			355 49 26.43	175 49 31.81	Cat Island	3,272.4
Harcklerode	34 56 29.35	90 14 40.59	155 42 58.15	335 42 32.32	Nelmo	2,780.6
			46 50 50.54	226 50 16.71	Cat Island	2,601.8
Cat Island	34 55 31.59	90 15 55.39	300 8 52.51	120 9 16.37	Lamb	1,223.1
			6 5 55.01	186 5 52.61	Grider	1,003.6
Lamb	34 55 11.65	90 15 13.72	199 20 40.17	19 20 59.14	Harcklerode	2,537.2
			71 46 13.77	251 45 47.51	Grider	1,225.8
Grider	34 54 59.21	90 15 59.59	357 5 2.51	177 5 4.11	Star Landing	1,394.2
			54 39 10.41	234 38 27.85	John H	2,314.2
Star Landing	34 54 14.02	90 15 56.80	211 37 2.51	31 37 27.17	Lamb	2,085.6
			91 33 59.30	271 33 15.15	John H	1,959.3
John H	34 54 15.75	90 17 13.95	8 25 12.55	188 25 2.82	Williams	3,100.2
			34 4 47.85	214 4 3.62	Horseshoe Lake	3,503.6
Horseshoe Lake	34 52 41.57	90 18 31.27	276 13 30.72	96 14 4.71	Williams	1,518.2
			334 00 54.52	154 1 4.66	Buck Island Chute	1,028.4
Williams	34 52 36.22	90 17 31.83	218 40 31.62	38 41 25.98	Star Landing	3,860.4
			54 20 40.70	234 20 16.86	Buck Island Chute	1,303.1
Buck Island	34 51 37.17	90 18 55.16	196 59 58.56	17 00 12.22	Horseshoe Lake	2,075
			224 55 39.36	44 56 3.16	Buck Island Chute	1,497.1
Buck Island Chute	34 52 11.57	90 18 13.53	86 17 41.56	266 17 5.25	Porter Lake	1,616.1
Porter Lake	34 52 8.18	90.19 17.04	329 49 18.25	149 49 30.75	Buck Island	1,105.1
			58 17 19.75	238 16 43.24	Hackler	1,906.8
Hackler	34 51 35.65	90 20 20.91	268 45 12.74	88 46 1.75	Buck Island	2,178.2
			345 6 55.54	165 7 3.50	Bennett	1,463.8
Bennett	34 50 49.74	99 29 6.11	230 56 31.30	50 57 11.84	Buck Island	2,320.3
Bowie's Point	34 50 45.81	90 21 31.44	266 48 9.14	86 48 57.90	Bennett	2,170.9
			229 23 28.74	49 24 9.04	Hackler	2,359.4
			162 54 17.23	342 54 9.33	Cottonwood	1,194.2
Cottonwood	34 51 22.86	90 21 45.26	259 34 13.13	79 35 1.34	Hackler	2,178.2
			50 12 15.63	230 11 40.65	Polk	2,024.2
			83 25 56.83	263 24 42.83	Basket	3,310.7
Polk	34 50 40.81	90 22 46.48	265 22 6.35	85 22 49.23	Bowie's Point	1,912.6
Basket	34 51 10.55	90 23 54.75	297 51 9.53	117 51 48.54	Polk	1,961.3
			20 43 43.13	200 43 22.70	Sand Point	2,566.7
			60 39 59.83	240 38 56.43	Blues Point	3,233.6
Sand Point	34 49 52.64	90 24 30.51	240 40 18.70	60 41 18.12	Polk	3,030.8
			113 8 4.89	293 7 21.93	Blue's Point	2,077.7
Blue's Point	34 50 19.13	90 25 45.71	13 1 57.53	193 1 44.07	Commerce	2,655.1
			46 14 33.03	226 13 26.60	Peters	4,092.7
Commerce	34 48 55.18	90 26 9.27	234 47 15.17	54 48 11.57	Sand Point	3,071.4
			84 5 30.16	264 4 37.20	Peters	2,869.8
			30 51 09.15	210 50 25.07	Baldwin	3,828.1

Geographical positions from Mound City, Ark., to Helena, Ark.—Continued.

Station.	Latitude.	Longitude.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″		Meters.
Peters	34 48 47.25	90 27 42.03	352 26 15.60	172 26 24.47	Baldwin	3,067.8
			310 18 30.99	130 19 27.47	Clark	3,296.6
Baldwin	34 47 8.52	90 27 26.50	246 48 44.17	66 49 31.77	Clark	2,306.9
			309 54 6.06	129 55 14.93	Brinkley	4,602.4
			340 54 5.67	160 54 24.73	Ashley	2,596.7
Clark	34 47 37.99	90 26 3.67	344 43 42.97	164 44 6.53	Brinkley	3,603.2
			20 43 14.46	200 42 45.93	Ashley	3,594.3
Ashley	34 45 48.88	90 26 53.09	272 56 8.43	92 56 53.23	Brinkley	2,222.7
			4 43 21.23	184 42 16.09	Moon Lake	2,793.6
			43 53 10.33	223 52 43.97	Clack	1,698.1
Brinkley	34 45 45.18	90 25 25.75	42 32 58.21	222 32 3.29	Moon Lake	3,634
Moon Lake	34 44 18.52	90 27 2.10	148 46 38.96	328 46 17.47	Clack	1,528.3
			105 44 31.77	285 43 5.34	Carter	4,097.3
Clack	34 45 9.20	90 27 39.33	80 44 1.77	260 42 56.54	Carter	2,948.8
			106 23 41.57	286 22 8.39	Bordeaux Island	4,322.1
Carter	34 44 53.77	90 29 33.76	143 42 41.63	323 42 13.69	Bordeaux Island	2,105.6
			88 14 30.13	268 14 7.83	Bordeaux Chute	995.4
Bordeaux Island	34 45 48.85	90 30 22.77	351 43 05.79	171 43 11.43	Bordeaux Chute	1,745.9
			30 22 35.19	210 22 13.87	Favorite Chute	1,589.5
Bordeaux Chute	34 44 52.78	90 30 12.88	95 00 27.72	275 00 .77	Favorite Chute	1,397.
			35 17 35.32	215 17 20.35	Platon	1,154.1
Favorite Chute	34 44 56.19	90 31 .16	332 59 37.17	152 59 49.15	Platon	1,177.3
			30 32 37.37	210 32 8.71	Rogers	2,517.6
Platon	34 44 22.15	90 30 39.14	58 19 36.24	238 18 55.61	Rogers	2,131.6
			359 57 47.98	179 57 47.96	Alexander	2,087.8
Rogers	34 43 45.82	90 31 50.45	296 49 37.71	116 50 18.36	Alexander	2,694.6
			337 9 53.61	157 10 9.12	Walnut Bend	1,784.7
Alexander	34 43 16.01	90 30 39.08	57 6 21.56	237 5 56.42	Walnut Bend	1,337.6
Walnut Bend	34 42 52.44	90 31 23.23	294 58 55.12	114 59 57.65	Perry	3,063.8
			325 43 6.12	145 43 20.94	Hardin's Point	5,988.1
Alexander	.....	.....	320 31 16.25	140 31 53.65	Perry	2,628.5
Perry	34 42 10.17	90 29 33.42	351 18 44.03	171 18 56.34	Hardin's Point	3,645.6
			320 33 24.30	140 34 32.72	Frederick	4,317.3
Hardin's Point	34 40 13.21	90 29 11.78	272 39 32.94	92 40 29.02	Frederick	2,512.5
			348.17 53.14	168 18 .05	Wardell	1,325.5
Frederick	34 40 9.42	90 27 33.19	57 58 25.91	237 57 36.75	Wardell	2,395.9
			27 20 34.99	257 19 49.74	O. K.	4,412.9
Wardell	34 39 24.73	90 28 59.63	356 04 33.65	176 4 37.54	O. K.	2,548.2
			62 17 44.55	242 17 15.55	Battle Island	1,468.5
O. K.	34 38 2.19	90 28 52.78	141 38 55.63	321 38 22.75	Battle Island	2,373.7
			113 1 54.12	293 00 28.50	Shoo-Fly	4,167.4
Battle Island	34 39 2.60	90.29 50.62	84 24 21.75	264 23 29.	Shoo-Fly	2,273.7
			119 11 30.25	299 10 55.79	Berry	1,767.6
Shoo-Fly	34 38 55.08	90 31 23.40	216 49 35.50	36 49 53.79	Berry	1,398.4
			165 26 35.30	345 26 23.68	Saint Francis	2,069.0
			130 41 18.88	310 40 6.86	Jackson	4,251.2
			78 14 32.07	258 13 8.40	Turner	3,828.2
Berry	34 39 30.58	90 30 51.28	124 10 21.89	304 9 51.98	Saint Francis	1,618.4
Saint Francis	34 40 .08	90 31 43.83	105 52 26.88	285 51 26.46	Jackson	2,810.8
Jackson	34 40 25.02	90 33 30.04	8 22 42.46	188 22 30.80	Turner	3,598.2
			40 46 51.66	220 45 55.02	Lotta	3,595.1
Turner	34 38 29.74	90 33 50.58	108 6 1.47	288 5 17.22	Lotta	2,665.
			54 17 11.15	234 16 11.88	Sterling	3,271.5
Lotta	34 38 50.76	90 35 8.41	14 45 38.22	194 45 23.18	Sterling	2,644.9
Sterling	34 37 27.75	90 35 34.87	309 21 43.78	129 22 37.46	Jack's Island	3,114.2
			340 1 41.48	160 1 55.56	Horner	1,868.3
Horner	34 36 31.37	90 35 10.09	277 38 00.66	97 38 40.26	Jack's Island	1,792.3
			314 48 38.86	134 49 16.32	Prairie Point	2,368.
Jack's Island	34 36 23.64	90 34 .36	183 39 59.16	3 40 4.72	Turner	3,893.5
			323 01 29.76	143 1 56.10	Buck-shot	1,665.1
			3 50 20.26	183 59 18.12	Prairie Point	1,434.7
Prairie	34 35 37.18	90 34 4.13	276 10 48.22	96 11 16.69	Buckshot	1,265.5
			355 56 50.12	175 56 54.11	Adams	2,533.5
Buckshot	34 35 32.69	90 33 13.97	316 58 59.78	136 59 32.57	Helena Island	2,157.9
			24 42 43.18	204 42 18.71	Adams	2,628.5
Helena Island	34 34 41.48	90 32 16.20	72 30 20.67	252 29 23.41	Adams	2,698.3
Adams	34 34 15.16	90 33 57.10				
W. Base	34 39 10.54	90 32 25.40	286 47 24.65	106 47 59.90	Shoo-Fly (east base)	1,668.9

A 3.

Geographical positions between Greenville, Miss., and Donaldsonville, La.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Hampton	30 5 12.13	373.7	90 53 7.46	199.8				
Anderson	30 4 9.38	288.9	90 54 48.47	1,297.9	234 27 17.4	54 28 8	Hampton	3,324.3
Lemann	30 6 30.61	942.4	90 55 39.23	1,050.1	300 43 30.9	120 44 47	Hampton	4,727.8
					342 38 16.4	162 38 41.9	Anderson	4,556
Base, south end (Donaldsonville)	30 4 23.90	736	90 58 16.57	283.1	226 4 44.3	46 6 00.2	Lemann	5,625.5
					274 42 20.2	94 44 7.5	Anderson	5,431.5
Base, north end (Donaldsonville)	30 6 11.22	345.6	90 57 54.89	1,469.3	260 39 28.8	80 40 36.9	Lemann	3,680.9
					7 14 41.1	187 14 33.2	Donaldsonville, S. B	3,331.1
Tureaud	30 7 35.43	1,090.8	90 54 10.85	290.3	338 57 21	158 57 53	Hampton	4,727.5
					49 51 10	229 50 26	Lemann	3,095.4
Riverton	30 8 37.55	1,156.1	90 57 21.76	582.3	290 30 26	110 32 2	Tureaud	5,456.1
					324 54 55	144 55 47	Lemann	4,776.1
Burnside	30 9 52.19	1,606.9	90 55 55.82	1,493.4	326 17 6	146 17 59	Tureaud	5,061.8
					45 1 45	225 1 2	Riverton	3,251.5
Garnier Baggasse burner	30 3 23.15	712.8	90 53 32.56	872				
Rapidan sugar-house chimney	30 4 38.26	1,178	90 52 24.02	643.1	131 52 21	311 52 00	Hampton	1,562.8
Colomb Baggasse burner	30 4 30.60	942.2	90 50 46.33	1,240.5				
Union sugar-house chimney	30 6 40.08	1,234	90 54 14.94	400	82 38 2	262 37 20	Lemann	2,276.6
					326 18 5	146 18 39	Hampton	3,255.1
Anderson sugar house chimney	30 3 31.15	959.1	90 55 4.63	123.9	200 12 45	20 12 53	Anderson	1,253.6
Winchester sugar-house chimney	30 3 3.34	102.8	90 54 51.18	1,370.9	183 4 01	2 4 2	Anderson	2,034
Saint Victoria Baggasse burner	30 3 15.60	483	90 54 17.09	457.8	153 3 34	333 3 18	Anderson	1,853.8
New Hope sugar-house chimney	30 3 24.54	755.6	90 53 1.37	36.6	115 43 8	295 42 14	Anderson	3,183.3
Monlor sugar-house chimney	30 4 47.63	1,466.4	90 52 2.99	80	113 37 25	293 36 53	Hampton	1,885
Trist sugar-house chimney	30 4 30.21	930.2	90 53 1.65	44.1	173 6 8	353 6 5	Hampton	1,300.6
					77 22 41	257 21 47	Anderson	2,932.4
Lauderdale sugar-house chimney	30 4 28.08	863	90 55 10.87	291	313 45 55	133 46 6	Anderson	830.8
					168 37 20	348 37 5	Lemann	3,849.5
Salsbury sugar-house chimney	30 5 19.42	597.9	90 55 20.60	551.6	167 9 51	347 9 42	Lemann	2,247.4
					338 15 56	158 16 12	Anderson	2,322.2
Whitehall sugar-house chimney	30 4 42.21	1,299.6	90 53 37.28	1,000.8	220 59 23	40 59 38	Hampton	1,220.8
					170 27 34	350 27 17	Tureaud	5,408.5

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		Meters.
Leblanc Bagasse burner	30 4 59.64	1,836.2	90 55 41.57	1,113	317 25 32	137 25 59	Anderson	2,102.2
					181 16 51	1 16 52	Lemann	2,801
St. Mary's Church cross	30 5 17.96	553	90 54 17.33	464.1	21 33 45	201 33 29	Anderson	2,270.7
					135 33 49	315 33 7	Lemann	3,132.7
Brand sugar-house chimney	30 6 00.47	14.5	90 54 5.02	134.4	314 00 18	134 00 47	Hampton	2,141.9
					176 55 42	356 55 39	Tureaud	2,928.3
Scanlon sugar-house chimney	30 6 12.30	378.7	90 54 9.49	254.1	318 8 18	138 8 49	Hampton	2,487.7
					179 9 36	359 9 35	Tureaud	2,559.8
Houmas sugar-house chimney	30 7 27.27	839.6	90 54 26.23	702	238 28 30	58 28 37	Tureaud	489.9
					48 15 47	228 15 10	Lemann	2,621.1
Cofield sugar-house chimney	30 7 53.23	1,638.9	90 55 58.42	1,563.4	181 3 46	1 3 47	Burnside	3,662.6
					348 37 9	168 37 19	Lemann	2,595.9
Clark pump chimney	30 8 12.41	382.1	90 55 25.68	687.3	165 15 19	345 15 3	Burnside	3,176.4
					6 37 57	186 37 50	Lemann	3,156.3
Clark sugar-house chimney	30 8 37.55	1,136.1	90 55 27.52	736.4	161 42 47	341 42 32	Burnside	2,429.4
					4 36 17	184 36 11	Lemann	3,922.2
Brulé sugar-house chimney	30 8 31.54	971.1	90 53 15.42	412.6	120 3 18	300 1 57	Burnside	4,969.7
					40 42 35	220 42 7	Tureaud	2,278.2
Orange Grove sugar-house chimney	30 8 50.20	1,545.6	90 53 54	1,444.9	120 20 30	300 19 29	Burnside	3,779.5
					11 8 15	191 8 7	Tureaud	2,346.4
Donaldson sugar-house chimney	30 9 3.97	122.2	90 55 58.42	1,563.2	182 36 59	2 37 00	Burnside	1,485.7
					313 27 15	133 28 9	Tureaud	3,963.8
Riverton sugar-house chimney	30 8 57.16	1,759.8	90 56 51.38	1,374.8	221 14 11	41 14 40	Burnside	2,252.3
					53 25 48	233 25 33	Riverton	1,015.1
Conway sugar-house chimney	30 9 10.86	334.4	90 54 41.79	1,118.2	122 41 25	302 40 48	Burnside	2,355.8
					17 19 42	197 19 13	Lemann	5,169.2
Crescent	30 5 17.78	547.4	91 00 20.80	556.9	247 9 4.5	67 10 17.7	North Base	4,239.4
					295 25 56.6	115 27 1.9	South Base	3,862.1
Leblanc	30 7 15.14	466.1	91 00 14.10	377.4	297 49 36.4	117 50 46.2	West Base	4,214.6
					2 50 37.7	182 50 34.8	Crescent	3,617.9
Ayraud	30 5 44.77	1,378.4	91 2 27.88	746.4	232 9 00.1	52 10 7.2	Leblanc	4,535.3
					283 42 58.1	103 44 1.8	Crescent	3,602.9
Evan Hall	30 7 31.81	979.4	91 2 36.88	987.3	355 49 4.6	175 49 9.1	Ayraud	3,304.7
					277 38 34.1	97 39 45.8	Leblanc	3,856.5
Saint Martin	30 9 15.71	483.7	91 2 03.15	84.3	15 45 47.9	195 45 31	Evan Hall	3,324.1
					321 49 18.1	141 50 7.9	Leblanc	4,722.6

Texas	30 10 26.44	814	90 58 16.78	448.9	70 14 22.0	250 12 28.3	Saint Martin	6,436.8
					28 4 00.2	208 3 1.3	Leblanc	6,675.1
Southwood	30 13 26.81	825.4	91 3 4.90	130.9	305 45 31.9	125 47 56.8	Texas	9,499.7
					347 56 6	167 56 37.1	Saint Martin	7,900.5
Claiborne	30 11 58.70	1,807.2	91 4 12.19	326	213 32 58.7	33 33 32.5	Southwood	3,255.8
					325 27 58.6	143 29 3.5	Saint Martin	6,091.6
Dupuy	30 14 42.98	1,321.7	91 6 42.57	1,137.9	321 29 48.1	141 31 3.8	Claiborne	6,461.4
					291 55 14	111 57 3.6	Southwood	6,274.6
Ophelia	30 13 4.60	141.7	91 8 8.43	225.4	217 9 52.5	37 10 35.7	Dupuy	3,799.9
					287 47 20.4	107 49 19.3	Claiborne	6,636.5
Rome	30 6 46.50	1,431.6	91 00 56.81	1,520.6	117 31 2.7	297 30 12.5	Evan Hall	3,020.5
					232 21 47.8	52 22 9.2	Leblanc	1,443.8
Dichary	30 8 23.93	736.8	91 00 31.02	830.2	64 32 5.9	244 31 2.7	Evan Hall	3,731.5
					122 53 38.9	302 52 52.6	Saint Martin	2,935.9
Bowden	30 9 39.47	1,215.3	90 59 40.71	1,089.1	30 4 9.9	210 3 44.6	Dichary	2,687.4
					79 8 38.4	259 7 26.8	Saint Martin	3,881
Rescue	30 12 58.45	1,799.6	91 4 35.72	955.1	250 12 57	70 13 42.7	Southwood	2,580.9
					341 6 59.2	161 7 11	Claiborne	1,944.6
Maryland	30 12 33.13	1,020.1	91 6 15.49	414.2	253 42 27.3	73 43 17.5	Rescue	2,779.9
					287 48 59	107 50 1	Claiborne	3,464.2
Belle Grove	30 11 22.14	681.7	91 7 11.89	318	214 36 40.5	34 37 8.9	Maryland	2,656.1
					256 48 35.1	76 50 5.5	Claiborne	4,937.1
School	30 14 53.98	1,662	91 7 14.93	898.9	291 27 15	111 27 31.3	Dupuy	929.4
					23 1 13	203 00 46.1	Ophelia	3,659.2
Point Pleasant	30 15 22.95	706.6	91 6 51.73	1,382.7	348 45 43.8	168 45 48.4	Dupuy	1,256.2
					34 48 18.9	214 48 7.2	School	1,086.5
Monticello	30 15 38.53	1,186.3	91 6 25.64	685.2	55 28 45.2	235 28 32.1	Point Pleasant	846.5
					14 48 47.9	194 48 39.4	Dupuy	1,770.7
Golden Ridge	30 15 54.89	1,690	91 7 40.50	1,082.5	8 6 25.6	188 6 11.5	Ophelia	5,296.7
					325 2 47.3	145 3 16.5	Dupuy	2,703.4
Clement	30 15 59.78	1,840.5	91 9 47.90	1,280.2	272 31 18.5	92 32 22.6	Golden Ridge	3,408.7
					333 44 56.5	153 45 46.6	Ophelia	6,014.2
Ventress	30 16 50.81	1,564.3	91 8 24.25	647.9	54 54 9.2	234 53 27	Clement	2,732.8
					325 48 59.2	145 49 21.3	Golden Ridge	2,081.5
Anger	30 17 26.38	812.2	91 10 03.83	102.4	292 21 45.9	112 22 36.1	Ventress	2,877.6
					350 55 48.1	170 55 56.1	Clement	2,700.4
Evergreen	30 16 28.82	887.3	91 11 56.98	1,522.7	239 36 52.9	59 37 50.1	Anger	3,505.3
					284 31 6.6	104 32 11.8	Clement	3,504.1
Batture	30 17 6	184.7	91 12 00.05	1.3	355 53 44.9	175 53 46.4	Evergreen	1,147.8
					258 34 00.1	78 34 58.7	Anger	3,168.9
Gay	30 16 41.86	1,288.8	91 12 44.49	1,189	237 57 28.2	57 57 50.5	Batture	1,401
					287 33 1.1	107 33 24.9	Evergreen	1,331.8
Plaquemine	30 17 17.12	527.1	91 13 36.61	978.3	307 55 35.3	127 56 1.5	Gay	1,766
					277 33 1.8	97 33 50.4	Batture	2,603.1

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Point	30 18 5.54	170.5	91 13 24.99	667.7	11 45 54.8	191 45 48.8	Plaquemine	1,523
					337 12 42.9	157 13 3.2	Gay	2,794.7
Woodland	30 18 25.28	778.5	91 13 58.40	1,560.1	304 15 7.8	124 15 24.6	Point	1,080
					344 29 39.8	164 29 50.7	Plaquemine	2,178.2
Medora	30 19 7.26	223.5	91 12 35.95	960.3	59 36 1	239 35 19.3	Woodland	2,554.1
					34 35 5.8	214 34 40.9	Point	2,308.4
Conrad	30 18 47.15	1,451.8	91 11 14.38	384	105 52 20	285 51 38.7	Medora	2,265.5
					69 50 56.9	249 49 50.9	Point	3,717.4
Bailey	30 19 22.87	704.2	91 11 9.83	262.6	6 18 43.8	186 18 41.4	Conrad	1,106.7
					78 12 30.6	258 11 47	Medora	2,350.4
Bend	30 19 26.44	814.1	91 9 37.69	1,006.8	87 26 53.5	267 26 6.9	Bailey	2,463.9
					64 54 33.8	244 53 45	Conrad	2,852.5
Manchac	30 18 59.06	1,818.5	91 8 51.13	1,365.6	124 8 3.2	304 7 39.6	Bend	1,502.9
					84 32 14.9	264 31 2.5	Conrad	3,844.9
Australia	30 20 9.88	304.2	91 9 36.29	969.3	331 2 39	151 3 1.7	Manchac	2,492.1
					1 36 25.9	181 36 25.1	Bend	1,337.9
Chatworth	30 20 41.01	1,262.8	91 9 2.28	59.5	43 30 35.1	223 30 17.8	Australia	1,321.6
					354 36 19.2	174 36 24.7	Manchac	3,153.1
Lopez	30 21 2.41	74.2	91 11 36.36	970.9	279 5 5.6	99 6 23.3	Chatworth	4,169
					296 45 28.8	116 46 29.2	Australia	3,591.8
Woods	30 20 24.97	768.9	91 10 49.80	1,330	132 5 14.8	312 49 54.3	Lopez	1,695.8
					260 14 17.3	80 15 11.6	Chatworth	2,915.3
Martin	30 20 21.73	669.1	91 12 11.45	305.8	216 47 59.2	36 48 16.8	Lopez	1,564.5
					275 1 14.2	95 2 32.4	Australia	4,160.4
Cottage	30 21 15.31	471.4	91 13 24.29	648.6	310 17 40.1	130 18 16.7	Martin	2,551
					277 50 20.8	97 51 15.1	Lopez	2,909.8
Hickey	30 20 45.69	1,406.9	91 14 33.64	898.3	243 46 33.9	63 47 8.8	Cottage	2,064.6
					280 58 59.8	101 00 11.5	Martin	3,868.9
Missouri	30 22 19.99	615.5	91 14 33.54	895.5	3 11.2	180 3 11.1	Hickey	2,903.9
					317 7 12.0	137 7 47.5	Cottage	2,717.8
Duncan	30 22 7.16	220.4	91 13 55.90	1,492.5	111 27 50.1	291 27 31.1	Missouri	1,079.9
					21 53 19.7	201 53 00.6	Hickey	2,703.6
Arlington	30 23 47.41	1,459.8	91 12 49.12	1,311	46 00 35.3	225 59 42.4	Missouri	3,875.4
					11 20 26.5	191 20 8.6	Cottage	4,776.0
Cinclare	30 23 45.79	1,410	91 13 36.63	977.6	267 44 44.5	87 45 8.4	Arlington	1,269.4
					29 54 17.2	209 53 48.3	Missouri	3,047

Boulieu	30 25 19.51	600.7	91 12 39.53	1,054.9	27 50 33	207 50 4	Cinclare	3,263.7
					5 9 20.1	185 9 15.2	Arlington	2,847.6
Base, south end (Baton Rouge)	30 25 9.43	290.4	91 11 42.15	1,124.8	101 27 59.5	281 27 30.4	Boulieu	1,562.6
					35 17 37.9	215 17 3.9	Arlington	3,094.1
Limerick	30 26 9.88	304.2	91 12 12.40	330.9	336 33 4.3	156 33 19.5	South Base	2,029.2
					25 1 10.4	205 00 56.6	Boulieu	1,711.7
Base, north end (Baton Rouge)	30 25 59.92	1,845	91 11 24.72	659.5	103 33 37.3	283 33 13.1	Limerick	1,308.9
					16 39 14.8	196 39 5.9	South Base	1,622.895
Baton Rouge	30 26 19	585	91 11 26.42	704.9	355 34 32.4	175 34 33.2	North Base	589.4
					77 6 36.5	257 6 13.1	Limerick	1,258.6
Ferry	30 27 10.10	311	91 12 1.52	40.5	329 14 7.4	149 14 25.1	Baton Rouge	1,831.2
					8 53 37.7	188 53 32.1	Limerick	1,877
Baton Rouge Barracks astronomical azimuth station	30 27 28.35	1,872.9	91 11 24.43	651.7	60 24 24.5	240 24 5.6	Ferry	1,138
					1 25 16.6	181 25 15.5	Baton Rouge	2,136.2
Baton Rouge astronomical and longitudinal station	30 27 18.02	554.8	91 11 17.86	476.4	88 07 21.6	268 7 18.8	Pole	148.77
Pole	30 27 17.86	549.8	91 11 23.43	625	175 16 18	355 16 17.5	Barracks	324.1
					76 45 50.5	256 45 40.1	Ferry	1,044
Hermitage sugar-house chimney	30 6 59.43	1,829.7	90 57 48.23	1,291	6 50 55	186 50 52	North Base	1,495.3
					52 33 01	232 31 45	Crescent	5,146.4
Donaldsonville Catholic Church, east tower	30 6 18.05	555.7	90 58 58.25	1,559.5	130 53 13	310 52 35	Leblanc	2,685.6
					340 1 57	160 2 21	South Base	3,739.5
Wallace sugar-house chimney	30 5 39.89	1,228.1	90 57 58.33	1,561.6	185 27 38	5 27 40	North Base	969
					79 53 26	259 52 15	Crescent	3,875.2
Stella sugar-house chimney	30 5 37.09	1,142	90 57 29.10	779.1	82 38 40	262 37 14	Crescent	4,636
					124 21 40	304 20 17	Leblanc	5,350.6
Dugas sugar-house, east chimney	30 5 55.55	1,710.2	90 58 11.01	294.7	221 48 50	41 48 58	North Base	647.5
					71 30 31	251 29 26	Crescent	3,664.7
Crescent sugar-house chimney	30 4 39.01	1,201.1	91 1 17.43	466.6	158 12 49	338 12 9	Evan Hall	5,730.4
					231 47 11	51 47 39	Crescent	1,930
Lemann sugar-house chimney	30 5 49.57	1,526.2	90 59 1.67	44.7	65 12 34	245 11 54	Crescent	2,334.2
					143 39 2	323 38 26	Leblanc	3,271.3
Ice-factory chimney	30 6 16.71	514.4	90 58 30.70	821.8	58 23 40	238 22 45	Crescent	3,461.8
					123 1 26	303 00 34	Leblanc	3,301.3
Donaldsonville, cross on convent	30 6 14.36	442.1	90 59 5.47	146.4	49 11 15	229 10 37	Crescent	2,665.5
					135 31 34	315 31 00	Leblanc	2,622.5
Donaldsonville, cupola of Lemann's block	30 6 25.81	794.6	90 59 13.37	358	40 46 8	220 45 34	Crescent	2,765.5
					133 3 14	313 2 44	Leblanc	2,225
Evan Hall saw-mill chimney	30 7 18.64	573.9	91 2 8.51	227.8	286 59 2	107 1 9	North Base	7,100.2
					297 16 19	117 16 55	Rome	2,159.6
Leblanc sugar-house, south chimney	30 7 46.75	1,439.3	90 59 34.41	920.9	317 49 33	137 50 23	North Base	3,968.6
					47 30 31	227 30 11	Leblanc	1,441.1
Frances Gomes sugar-house chimney	30 5 33.27	1,024.4	91 1 31.75	850.1	284 5 31	104 6 7	Crescent	1,958.7
					103 15 25	283 14 57	Ayrand	1,544.3
Evan Hall sugar-house chimney	30 7 2.28	70.2	91 2 52.87	1,415.2	264 40 16	84 41 36	Leblanc	4,268.7
					344 20 14	164 20 27	Ayrand	2,478.7

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Donaldsonville Methodist Church	30 6 15.28	470.2	90 59 25.48	682.1	39 55 22	219 54 54	Crescent	2,308.6
					144 46 6	324 45 42	Leblanc	2,256.3
Donaldsonville Baptist Church	30 6 11.64	358.4	90 59 18.79	503.1	45 2 29	225 1 58	Crescent	2,346.7
					142 52 3	322 51 35	Leblanc	2,452.6
Souvenir sugar-house chimney	30 6 45.94	1,414.4	91 1 51.94	1,390.4	27 3 57	207 3 39	Ayrand	2,115.1
					139 34 40	319 34 18	Evan Hall	1,855.4
Gem sugar-house chimney (?)	30 8 42.08	1,295.6	91 00 2.69	72	53 37 36	233 37 22	Dichary	941.7
					198 24 27	18 24 38	Bowden	1,862
Bowden sugar-house chimney	30 9 36.64	1,128.1	90 59 1.07	28.6	82 28 47	262 27 16	Saint Martin	4,915
					217 41 22	37 41 44	Texas	1,938
McManner sugar-house chimney	30 7 42.49	1,308.2	91 2 40.30	1,078.5	249 44 56	69 46 1	Dichary	3,687.9
					344 27 22	164 27 24	Evan Hall	341.4
McManner saw-mill chimney	30 7 44.22	1,361.5	91 2 11.55	309.1	311 36 36	131 37 14	Rome	2,676.2
					60 35 27	240 35 14	Evan Hall	778.3
Canty saw-mill chimney	30 7 39.98	1,230.9	91 1 31.59	845.5	330 30 58	150 31 16	Rome	1,891.8
					23 1 12	203 00 44	Ayrand	3,854.5
Palo Alto sugar-house chimney	30 5 37.30	1,148.4	91 2 23.93	640.6	155 19 31	335.19 29	Ayrand	253.3
					174 23 9	354 23 2	Evan Hall	3,543.2
Burnside bagasse burner	30 8 34.94	1,074.8	91 2 2.71	72.5	25 12 6	205 11 49	Evan Hall	2,148.1
					179 28 8	359 8 8	Saint Martin	1,255.5
Adelard Landry sugar-house chimney	30 10 2.25	69.3	91 00 48.96	1,309.8	291 00 40	111 1 14	Bowden	1,956.3
					54 10 37	234 10 00	Saint Martin	2,448.6
R. O. Landry sugar-house chimney	30 8 56.24	1,731.5	91 1 36.25	970	31 58 40	211 58 9	Evan Hall	3,064.6
					129 47 26	309 47 12	Saint Martin	936.7
St. Ann's Chapel	30 9 6.78	208.7	90 59 42.17	1,128.3	182 13 8	2 13 9	Bowden	1,007.2
					94 10 37	274 9 26	Saint Martin	3,782.6
Ashland flag-staff	30 10 23.72	730.4	91 00 7.84	209.7	331 56 55	151 57 9	Bowden	1,543.9
					55 50 25	235 49 27	Saint Martin	3,728.8
Ashland sugar-house chimney	30 10 59.90	1,844.2	90 59 14.96	400.1	308 29 36	123 30 5	Texas	1,866.7
					15 33 1	195 32 48	Bowden	2,570.6
Mount Houmas sugar-house chimney	30 12 11.88	365.8	91 00 41.51	1,110.1	309 58 17	129 59 30	Texas	5,052.9
					102 54 41	282 52 43	Rescue	6,426.1
Waterloo sugar-house chimney	30 12 42.28	1,301.7	91 1 19.16	512.2	310 35 53	130 37 35	Texas	6,425.9
					87 59 3	267 56 34	Maryland	7,929.6
Cuba sugar-house chimney	30 11 4.48	138	91 2 5.35	143	358 58 [illegible]4	178 58 55	Saint Martin	3,349.9
					116 12 37	296 11 33	Claiborne	3,780.8
Yale sugar-house chimney	30 10 46.66	1,436.5	91 1 47.86	1,280.2	[illegible] 18 [illegible]	188 18 30	Saint Martin	2,[illegible]
					110 53 26	290 52 14	Claiborne	4,[illegible]

Woodstock sugar-house chimney	30 10 28.12	865.8	91 1 20.51	548.7	27 6 16	207 5 55	Saint Martin	2,504.4
					121 16 48	301 15 22	Claiborne	5,373.5
Modeste sugar-house chimney	30 10 23.42	721.1	91 1 7.85	209.9	35 22 16	215 21 48	Saint Martin	2,556.5
					120 45 48	300 44 15	Claiborne	5,738.2
Home-place sugar-house chimney	30 9 26.63	819.9	91 00 42.41	1,134.6	81 9 22	261 8 41	Saint Martin	2,186.5
					129 51 10	309 49 25	Claiborne	7,309
Pelico sugar-house chimney	30 9 7.75	238.6	91 1 19.13	511.9	249 38 45	69 39 34	Bowden	2,808.8
					101 45 14	281 44 52	Saint Martin	1,202.9
Dichary sugar-house chimney	30 8 21.56	663.8	91 00 11.37	304.3	97 54 59	277 54 49	Dichary	531
					198 52 45	18 53 00	Bowden	2,535.3
Mount Houmas House, south gable	30 11 44.14	1,359	91 1 12.85	343.6	112 52 38	292 50 56	Rescue	5,888.6
					136 32 15	316 31 19	Southwood	4,356.6
Chatham sugar-house chimney	30 11 24.09	741.8	91 3 37.71	1,008.7	116 45 00	296 43 41	Maryland	4,725.7
					151 54 10	331 53 41	Rescue	3,294.1
Claiborne sugar-house chimney	30 11 50.01	1,539.7	91 4 33.92	907.1	178 41 46	358 41 45	Rescue	2,108
					245 17 11	65 17 22	Claiborne	640
Ohlivalla sugar-house chimney	30 10 41.37	1,273.7	91 7 35.26	943.1	211 47 33	31 48 13	Maryland	4,049.5
					246 18 54	66 20 36	Claiborne	5,931.4
Belle Grove sugar-house chimney	30 11 6.52	200.7	91 6 55.59	1,487	137 48 12	317 48 3	Belle Grove	649.3
					201 54 36	21 54 56	Maryland	2,874.5
Celeste sugar-house chimney	30 11 29.94	921.9	91 6 19.47	520.7	80 17 31	260 17 4	Belle Grove	1,422.8
					183 8 5	8 8 7	Maryland	1,948.9
Belle Grove store, east gable	30 11 21.67	667.2	91 7 11.85	317	175 49 51	355 49 51	Belle Grove	14.5
					256 38 38	76 40 8	Claiborne	4,939.3
Old Hickory sugar-house chimney	30 11 58.94	1,660.7	91 5 22.71	607.3	130 32 00	310 31 33	Maryland	1,857.4
					212 19 00	32 19 23	Rescue	2,350.7
Hard Times sugar-house chimney	30 13 15.64	481.5	91 5 13.91	371.8	297 23 16	117 23 35	Rescue	1,150.3
					325 7 42	145 8 13	Claiborne	2,887.5
Rescue sugar-house chimney	30 13 10.88	335	91 4 28.91	772.9	257 40 44	77 41 26	Southwood	2,299.3
					348 37 35	168 37 43	Claiborne	2,267.5
Revanue sugar-house chimney (?)	30 13 32.40	997.6	91 3 58.18	1,555.5	276 52 58	96 53 25	Southwood	1,434.9
					43 50 53	223 50 34	Rescue	1,449.4
Southwood sugar-house chimney	30 13 19.56	662.3	91 2 54.08	1,446	75 9 5	255 7 24	Maryland	5,573
					127 39 37	307 39 32	Southwood	365.6
Indian Camp sugar-house chimney	30 11 52.54	1,617.6	91 7 29.41	786.4	154 48 56	34 48 36	Ophelia	2,452.4
					246 23 19	366 24 47	Rescue	5,069.6
Arizona sugar-house, south chimney	30 13 16.99	523.1	91 5 3.88	163.7	264 33 57	84 34 57	Southwood	3,195.9
					307 10 33	127 10 47	Rescue	945.1
Arizona sugar-house north-chimney	30 13 17.46	537.6	91. 5 4.02	107.5	264 49 40	84 50 41	Southwood	3,198.5
					307 43 1	127 43 15	Rescue	956.9
River light	30 12 57.41	1,767.5	91 4 47.57	1,271.9	72 22 8	252 21 24	Maryland	2,467.4
					264 14 42	84 14 48	Rescue	318.4
Star sugar-house chimney	30 14 49.26	1,516.6	91 6 25.28	675.6	40 34 8	220 33 16	Ophelia	4,241.9
					145 43 24	325 43 11	Point Pleasant	1,255.6

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Palo Alto	30 14 10.26	315.9	91 8 4.73	126.6	245 23 12	65 23 53	Dupuy	2,416.4
					2 47 42	182 47 40	Ophella	2,024.1
Willow Glen	30 16 14.30	440.3	91 7 2.23	59.6	318 23 36	138 23 54	Monticello	1,473
					349 55 59	169 56 4	Point Pleasant	1,685.8
St. Gabriel Church	30 15 19.86	611.5	91 6 24.33	650.3	23 13 24	203 13 15	Dupuy	1,287.1
					97 24 28	277 24 14	Point Pleasant	788.7
Bagatelle sugar-house chimney	30 14 32.32	995.2	91 6 22.29	595.7	121 4 45	301 4 35	Dupuy	633.1
					153 12 56	333 12 41	Point Pleasant	1,746.4
One-Hundred Mile sugar-house chimney	30 14 28.77	885.8	91 6 36.03	963.2	158 8 12	338 8 9	Dupuy	470
					165 52 34	345 52 26	Point Pleasant	1,720.4
Levert	30 15 52.79	1,625.3	91 7 23.58	630.1	285 48 46	105 49 15	Monticello	1,610.3
					317 9 19	137 9 35	Point Pleasant	1,252.9
Greenfield sugar-house chimney	30 16 1.09	33.6	91 10 15.40	411.6	186 42 47	6 42 53	Anger	2,644.4
					273 8 37	93 8 51	Clement	736
Evergreen sugar-house chimney	30 16 16.64	512.4	91 11 53.10	1,419.2	123 57 15	303 56 23	Plaquemine	3,335.1
					173 1 33	353 1 30	Batture	1,531.3
Iron chimney	30 16 4.30	132.4	91 10 40.64	1,086.3	131 50 6	311 49 26	Batture	2,848.3
					248 32 29	68 33 38	Ventress	2,916.7
Church near Evergreen	30 16 29.16	897.9	91 11 54.45	1,455.2	106 17 58	286 17 33	Gay	1,393.4
					239 11 55	59 12 51	Anger	3,441.7
Forlorn Hope sugar-house chimney	30 17 24.21	745.6	91 9 25.67	686	76 13 31	256 11 51	Gay	5,471.2
					82 16 14	262 14 56	Batture	4,163.8
Plaquemine Catholic Church spire	30 17 31.97	984.5	91 14 2.85	76.2	224 22 48	44 23 7	Point	1,446.4
					303 6 19	123 6 32	Plaquemine	837.1
Light-house (near Woodland)	30 18 26.28	809.2	91 13 55.02	1,470	239 8 35	59 9 15	Medora	2,460.8
					308 30 44	128 30 59	Point	1,025.6
McWilliams's house lightning-rod	30 19 8.34	256.8	91 12 33.79	902.7	287 5 21	107 6 1	Conrad	2,219.4
					35 17 4	215 16 38	Point	2,368.6
Small house chimney	30 18 48.66	1,498.4	91 9 19.62	524.2	247 10 47	67 11 1	Manchac	826
					157 28 6	337 27 57	Bend	1,259.8
Manchac sugar-house chimney	30 18 42.30	1,302.6	91 8 23.10	617.2	124 34 1	304 33 47	Manchac	909.6
					91 52 53	271 51 27	Conrad	4,578.9
Australia sugar-house chimney	30 19 57.03	1,756.2	91 9 30.35	810.7	158 9 1	338 8 58	Australia	426.4
					209 00 45	29 00 59	Chatworth	1,548.6
Light-house (near Chatworth)	30 20 24.40	751.4	91 8 36.98	987.8	74 14 32	254 14 03	Australia	1,646.2
					127 10 73	307 9 50	Chatworth	846.4

Rouzan sugar-house chimney	30 20 30.97	953.7	91 8 5.19	138.6	23 26 46	203 26 23	Manchac	3,084.7
					75 3 39	255 2 53	Australia	2,518.5
Chatworth sugar-house chimney	30 20 53.56	1,649.4	91 8 36.12	964.6	6 29 27	186 29 19	Manchac	3,548.4
					61 00 34	241 00 21	Chatworth	797.2
Mulberry Grove sugar-house chimney	30 21 15.55	478.8	91 9 54.95	1,467.5	43 14 57	223 14 29	Woods	2,138
					346 9 8	166 9 17	Australia	2,062.5
Hollywood Bagasse chimney	30 21 15.40	474.2	91 10 38.58	1,030.3	10 55 29	190 55 23	Woods	1,581.5
					320 29 13	140 29 45	Australia	2,614.8
Touliet sugar-house chimney	30 20 25.26	777.9	91 11 44.48	1,188	81 25 49	261 25 35	Martin	728.4
					190 44 11	10 44 15	Lopez	1,164.5
Leperre sugar-house chimney	30 20 28.23	869.3	91 13 11.89	317.5	167 7 42	347 7 36	Cottage	1,487
					277 4 6	97 4 36	Martin	1,626.8
Light-house near Hicky (removed in April, 1880)	30 20 56.19	1,730.4	91 14 35.79	955.8	181 19 52	1 19 53	Missouri	2,581.1
					252 51 38	72 52 14	Cottage	1,908.1
Cottage sugar-house chimney	30 21 26.96	830.2	91 13 37.93	1,012.9	314 32 57	134 33 4	Cottage	511.3
					49 29 50	229 29 31	Hicky	1,956.6
Brulé Landing Church	30 23 9.92	305.4	91 14 9.27	247.5	241 38 49	61 39 10	Arlington	2,431.4
					349 32 00	169 32 7	Duncan	1,965.4
Cinclare stable lightning-rod	30 23 49.57	1,526.6	91 13 52.33	1,396.8	215 2 58	35 3 35	Boulieu	3,383.2
					285 31 38	105 31 46	Cinclare	435
Boulieu sugar-house chimney	30 25 28.09	865	91 12 40.23	1,313.7	287 47 29	107 48 3	South Base	1,880.2
					315 34 40	135 34 45	Boulieu	369.8
Vohn's sugar-house chimney	30 24 20.19	621.8	91 13 35.33	943	219 11 13	39 11 41	Boulieu	2,357
					1 52 18	181 52 17	Cinclare	1,059.7
Baton Rouge State University, pole on cupola	30 26 28.70	883.8	91 11 7.86	209.7	26 54 45	206 54 37	North base	994
					58 54 24	238 54 15	Baton Rouge	578.5
Baton Rouge Methodist Church spire	30 27 5.76	177.4	91 11 11.56	308.4	95 43 42	275 43 17	Ferry	1,339.5
					43 19 51	223 19 20	Limerick	2,365.5
Oaks sugar-house, south chimney	30 26 50.13	1,543.8	91 12 19.40	517.7	304 8 9	124 8 36	Baton Rouge	1,768
					351 25 29	171 25 33	Limerick	1,253.4
Baton Rouge State penitentiary, round brick chimney	30 27 4.21	129.7	91 10 55.59	1,483	95 53 28	275 52 55	Ferry	1,768.5
					21 26 7	201 25 52	North Base	2,127
Limerick sugar-house, south chimney	30 26 6.64	204.4	91 12 21.91	584.7	248 30 18	68 30 22	Limerick	272.7
					17 56 56	197 56 47	Boulieu	1,525.4
Limerick sugar-house, north chimney	30 26 07.17	230.7	91 12 21.85	583	251 40 34	71 40 39	Limerick	265.6
					278 19 37	98 20 6	North Base	1,541
Gay's house lightning-rod	30 26 57.53	1,771.6	91 12 5.83	155.5	196 31 57	16 31 59	Ferry	403.7
					318 26 59	138 27 19	Baton Rouge	1,585.4
Baton Rouge State-House, northwest tower	30 26 51.56	1,587.8	91 11 20.29	541.3	174 25 55	354 25 53	Barracks	1,138.5
					117 26 28	297 26 7	Ferry	1,239.2
Baton Rouge Barracks, flag-staff	30 27 23.45	722.2	91 11 17.33	462.3	128 35 40	308 35 37	Barracks	242.3
					70 47 47	250 47 25	Ferry	1,248.5
Wick's sugar-house chimney	30 25 32.16	999.3	91 11 3.26	87	56 00 10	235 59 50	South Base	1,252
					81 23 4	261 22 15	Boulieu	2,598.6

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Chamberlain	30 28 36.84	1,134.2	91 12 39.84	1,062.4	316 20 57.9	136 21 36.1	Barracks	2,914.7
					339 3 14.8	159 3 34.1	Ferry	2,860.1
Anchorage	30 28 56.53	1,740.6	91 12 1.00	26.7	59 39 55.8	239 39 36.1	Chamberlain	1,200.3
					340 14 05	160 14 23.5	Barracks	2,885.3
Favrot	30 29 56.62	1,743.4	91 13 16.57	441.8	312 33 12	132 33 50.3	Anchorage	2,736
					338 15 34.6	158 15 53.2	Chamberlain	2,644.8
Poplar	30 29 21.20	652.8	91 13 52.09	1,389.0	220 58 22.2	40 58 40.2	Favrot	1,444.7
					305 19 39.2	125 20 15.8	Chamberlain	2,362.1
Belle Vale	30 30 15.85	488.0	91 14 57.85	1,542.3	338 48 52.2	133 49 25.6	Poplar	2,430.6
					282 21 36.4	102 22 27.8	Favrot	2,765.1
Swamp	30 30 56.46	1,738.4	91 14 56.65	1,510.2	1 27 41	181 27 40.4	Belle Vale	1,251
					304 37 2.4	124 37 53.2	Favrot	3,243.2
Belair sugar-house, west chimney	30 30 29.34	903.5	91 12 25.29	674.4	6 23 26	186 23 19	Chamberlain	3,485.9
					47 48 48	227 48 4	Poplar	3,124.1
Belmont sugar-house chimney	30 29 59.54	1,833.5	91 14 10.47	279.1	11 41 18	291 40 54	Belle Vale	1,359.8
					337 27 5	157 27 14	Poplar	1,278.1
Babina sugar-house chimney	30 29 48.08	1,480.6	91 15 36.50	973.3	230 19 11	50 19 31	Belle Vale	1,339.2
					206 46 26	26 46 46	Swamp	2,358.5
Anchorage sugar-house chimney	30 29 00.32	9.9	91 12 19.57	522.0	283 16 7	103 16 17	Anchorage	508.9
					36 47 5	216 46 55	Chamberlain	902.8
Belle Vale sugar-house chimney	30 30 15.11	465.3	91 14 50.12	1,336.4	96 18 2	276 17 58	Belle Vale	207.3
					172 12 46	352 12 43	Swamp	1,285.2
Poplar Grove sugar-house chimney	30 29 26.77	824.3	91 12 24.08	642.2	85 49 31	265 48 46	Poplar	2,353.4
					123 17 41	303 17 14	Favrot	1,674.5
St. Peter's and St. Paul's Church	30 30 16.74	515.5	91 15 11.93	318.1	274 11 31	94 11 38	Belle Vale	376.3
					198 24 52	18 25 00	Swamp	1,289.1
Hill	30 28 26.16	805.4	91 12 00.77	20.5	331 23 18	151 23 36	Barracks	2,026.8
					0 29 42	180 29 42	Ferry	2,842.2
Bayou	30 28 28.01	862.4	91 11 31.79	847.7	353 51 41	173 51 45	Barracks	1,846.8
					85 47 36	265 47 21	Hill	775.1
Knox	30 29 17.00	523.4	91 11 35.75	953.3	355 59 48	175 59 50	Bayou	1,512.4
					23 5 16	203 5 3	Hill	1,701.9
Von Pool	30 29 25.04	770.9	91 12 2.07	55.2	289 25 59	109 26 12	Knox	744.6
					358 53 52	178 53 53	Hill	1,813.7
Monte Sano	30 30 38.62	1,189.1	91 11 35.42	944.4	0 11 41	180 11 41	Knox	2,513.7
					17 24 50	197 24 37	Von Pool	2,374.8

					68 16 11	248 15 51	Hard Times	1,188.5
Horner	30 31 22.65	697.4	91 13 21.13	563.4	266 42 44	86 43 29	Allsworth	2,347.9
					282 34 41	102 35 6	Hard Times	1,318.2
Viola	30 31 2.33	71.8	91 13 10.14	270.3	231 11 5	71 11 24	do	1,049.7
					154 54 17	334 54 11	Horner	690.9
Coal-yard	30 31 5.84	179.9	91 14 9.49	253.0	248 7 18	68 7 43	do	1,389.3
					273 54 6	93 54 36	Viola	1,586.1
Belmont	30 30 40.21	1,238.2	91 14 2.45	65.3	243 58 5	63 58 32	do	1,552.2
					166 37 20	346 37 16	Coal-yard	811.2
Colwell	30 30 33.08	1,018.5	91 16 28.16	750.8	253 33 14.1	73 34 00.6	Swamp	2,543.84
					282 25 15.5	102 26 1.3	Belle Vale	2,465.85
Bar	30 30 54.46	1,676.0	91 16 25.59	682.2	268 30 19.8	88 31 5	Swamp	2,372.08
					5 56 20.7	185 56 19.4	Colwell	661.86
Chinn	30 31 20.65	635.8	91 17 28.83	768.6	295 33 30.8	115 34 2.9	Bar	1,809.22
					312 9 20.4	132 9 51.2	Colwell	2,182.48
Point	30 31 24.19	744.9	91 16 50.51	1,346.4	339 15 32.5	159 15 43.8	do	1,682.81
					83 55 13.2	263 54 53.7	Chinn	1,027.61
Chamberlain	30 32 9.08	278.0	91 17 30.01	799.9	322 40 8.4	142 40 28.5	Point	1,736.64
					358 47 45.3	178 47 45.9	Chinn	1,490.14
Winter	30 32 4.12	126.9	91 16 30.43	811.1	23 31 6.1	203 30 55.9	Point	1,341.17
					95 26 28.7	275 25 58.4	Chamberlain	1,595.30
Devall	30 32 52.58	1,619.1	91 15 53.62	1,429.0	33 20 7.1	213 19 48.4	Winter	1,785.82
					62 26 51	242 26 2	Chamberlain	2,898.16
Thomas	30 32 31.95	963.8	91 15 36.48	972.3	59 13 9	239 12 41.6	Winter	1,674.06
					144 16 48.1	324 16 39.4	Devall	782.43
Springfield	30 33 54.83	1,688.3	91 15 2.51	66.9	19 31 59.7	199 31 42.4	Thomas	2,708.12
					35 23 52.4	215 23 26.4	Devall	2,351.70
Clarke	30 33 57.99	1,785.6	91 15 42.41	1,130.0	275 13 13.1	95 13 38.4	Springfield	1,067.82
					8 26 00.4	188 25 54.7	Devall	2,036.29
Last	30 34 42.00	1,298.3	91 16 00.57	15.2	313 11 18.7	133 11 48.3	Springfield	2,121.99
					340 21 17.7	160 21 26.9	Clark	1,438.94
Reynaud	30 34 17.51	539.1	91 16 5.26	140.1	189 24 34.3	9 24 36.7	Last	764.35
					314 38 18.9	134 38 30.5	Clark	855.51
Solitude	30 34 29.5	894.4	91 16 50.45	1,344.2	253 17 48.9	73 18 14.3	Last	1,387.70
					286 26 6.7	106 26 29.7	Reynaud	1,255.57
Riley	30 34 57.47	1,770.4	91 16 49.10	1,308.2	290 13 16.1	110 13 40.8	Last	1,378.15
					2 21 7.5	182 21 6.8	Solitude	875.93
Profit Island	30 34 56.93	1,752.9	91,17 50.14	1,335.8	269 24 51.1	89 25 22.2	Riley	1,626.32
					298 21 42.6	118 22 13	Solitude	1,807.36

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Lobdell	30 34 35.90	1,105.4	91 17 52.48	1,398.2	185 31 7.4	5 31 8.6	Profit Island	650.76
					277 16 4.2	97 16 35.8	Solitude	1,686.39
Glennon	30 35 16.58	510.5	91 18 48.99	1,305.2	291 5 57.4	111 6 27.3	Profit Island	1,680.73
					309 45 51	129 46 19.7	Lobdell	1,958.62
Gravel	30 35 30.46	987.9	91 18 6.96	185.3	336 31 34.1	156 31 42.7	Profit Island	1,125.60
					69 6 47.5	249 6 26.1	Glennon	1,198.38
Brown	30 36 26.05	802.0	91 18 8.19	218.1	358 54 26	178 54 26.6	Gravel	1,712.04
					26 56 18.6	206 55 57.8	Glennon	2,399.32
Kelson	30 36 45.92	1,413.9	91 18 44.59	1,187.5	302 15 17.7	122 15 36.2	Brown	1,146.70
					2 26 10.2	182 26 8	Glennon	2,753.54
Mount Pleasant	30 38 14.70	452.5	91 17 52.34	1,398.6	7 11 34	187 11 25.9	Brown	3,372.60
					26 58 55.1	206 58 28.5	Kelson	3,067.91
Wild Wood	30 38 18.60	572.7	91 18 21.21	564.7	278 51 17.3	98 51 32	Mount Pleasant	778.12
					12 18 45.7	192 18 33.8	Kelson	2,921.02
Port Manoir	30 39 50.66	1,559.9	91 17 58.96	1,569.3	356 35 5.9	176 35 9.3	Mount Pleasant	2,960.00
					11 48 18.7	191 48 7.4	Wild Wood	2,896.18
Slaughter	30 39 56.26	1,732.3	91 17 23.56	627.1	13 46 11.5	193 45 56.8	Mount Pleasant	3,219.94
					79 37 10.9	259 36 52.8	Port Manoir	958.16
Port Hudson	30 40 27.00	831.3	91 17 54.10	1,439.9	319 20 11.2	139 20 26.8	Slaughter	1,247.80
					6 35 38.6	186 35 36.1	Port Manoir	1,126.69
Long Wood	30 39 57.43	1,768.3	91 18 28.22	751.2	224 55 46.9	44 56 4.3	Port Hudson	1,286.32
					284 59 8.4	104 59 23.3	Port Manoir	806.59
Sandy Point	30 40 13.41	412.9	91 19 16.45	437.9	259 10 59.8	79 11 41.8	Port Hudson	2,231.77
					290 58 2.4	110 58 27	Long Wood	1,374.81
Big Cave	30 39 50.81	1,564.5	91 19 8.36	222.5	162 48 32.9	342 48 28.8	Sandy Point	728.32
					259 12 5.1	79 12 25.6	Long Wood	1,087.77
Van Winkle	30 40 2.06	63.4	91 20 23.82	634.0	258 58 8.1	78 58 42.5	Sandy Point	1,827.32
					279 46 29.7	99 47 8.2	Big Cave	2,038.54
Fancy Point	30 40 33.13	1,020.1	91 19 53.08	1,412.7	301 54 42.1	121 55 00.8	Sandy Point	1,148.69
					40 32 54.3	220 32 38.6	Van Winkle	1,259.07
Waterloo	30 41 18.99	584.7	91 20 57.75	1,536.8	309 21 36.8	129 22 9.8	Fancy Point	2,226.72
Shelton	30 41 32.96	1,014.9	91 20 30.05	799.7	339 7 43.1	159 8 00.4	Van Winkle	2,535.38
					331 53 26.6	151 53 45.5	Fancy Point	2,088.82
Labry	30 42 43.71	1,346.0	91 21 14.60	390.8	50 44 34.6	230 44 20.5	Waterloo	853.68
					331 23 30	151 24 1.8	Shelton	2,481.54
					350 11 48.7	170 11 57.4	Waterloo	2,647.52

Lebret	30 42 50.09	1,542.4	91 20 43.24	1,150.3	351 35 34.3	171 35 41	Shelton	2,400.96
					76 47 24.8	256 47 8.7	Labry	839.66
Porche	30 43 10.87	334.7	91 21 21.56	573.6	302 6 59 6	122 7 19.2	Lebret	1,203.80
					347 40 49.9	167 40 53.4	Labry	856.23
Powell	30 44 5.82	179.2	91 21 21.56	573.5	336 22 54	156 23 13.6	Lebret	2,545.14
					350 59 46.3	179 59 46.3	Porche	1,691.96
Taylor	30 43 39.89	1,228.3	91 21 33.21	883.4	340 51 51.4	160 51 57.4	Porche	945.66
					201 12 21.1	21 12 27.1	Powell	856.55
Thompson	30 44 31.96	984.1	91 22 4.28	113.8	305 18 49.2	125 19 11	... do	1,392.76
					332 43 40.7	152 43 56.6	Taylor	1,804.21
Fort	30 44 46.30	1,425.6	91 21 44.36	1,179.7	334 3 9.2	154 3 20.9	Powell	1,386.44
					50 11 34.3	230 11 24.1	Thompson	689.68
Point Coupée Base, southeast end	30 44 55.65	1,713.5	91 22 32.22	856.8	282 44 44	102 45 8.5	Fort	1,305.03
					314 28 16.5	134 28 30.8	Thompson	1,041.35
Alexander Creek	30 45 34.69	1,068.1	91 22 19.99	531.6	327 32 26.1	147 32 44.3	Fort	1,765.84
					15 8 9.5	195 8 3.2	Southeast Base	1,245.21
Point Coupée Base, northwest end	30 45 15.09	464.6	91 23 21.24	564.9	249 39 51.9	69 40 23.2	Alexander Creek	1,737.16
					294 38 59.7	114 39 24.8	Southeast Base	1,434.67
Taylor's sugar-house chimney	30 44 4.34	133.7	91 22 2.19	58.3	176 15 29	356 15 28	Thompson	852.6
					314 19 3	134 19 18	Taylor	1,077.6
Vignes sugar-house chimney	30 42 25.00	769.8	91 21 25.10	667.8	205 40 18	25 40 23	Labry	639.1
					235 15 22	55 15 43	Lebret	1,355.6
Waterloo Church	30 40 48.87	1,504.8	91 21 40.44	1,076.2	230 46 8	50 46 30	Waterloo	1,466.8
					279 37 00	99 37 55	Fancy Point	2,898.7
Waterloo store	30 41 50.56	1,556.8	91 21 08.12	216.1	298 8 38	118 8 57	Shelton	1,149.1
					344 9 24	164 9 29	Waterloo	1,010.7
Nina sugar-house chimney	30 40 57.64	1,774.8	91 21 4.74	126.1	195 48 5	15 48 9	.....do	683.2
					220 19 59	40 20 17	Shelton	1,426.6
Van Winkle B. B. (?)	30 39 20.57	633.4	91 20 43.16	1,149.1	173 55 6	353 54 59	Waterloo	3,667.2
					184 53 27	4 53 34	Shelton	4,091.6
Lieux sawmill	30 41 31.87	981.3	91 21 5.07	134.9	267 55 58	87 56 16	.....do	932.7
					338 20 34	158 20 55	Van Winkle	2,975.4
Elevator	30 40 19.62	604.1	91 17 21.84	581.4	47 56 5	227 55 46	Port Manoir	1,331
					104 50 27	284 50 11	Port Hudson	888.3
Port Hudson sawmill	30 40 36.66	1,128.8	91 17 20.56	547.2	17 29 10	197 28 27	Kelson	7,448.7
					20 48 10	200 47 39	Wild Wood	4,548.5
Wild Wood sawmill	30 38 15.63	481.0	91 18 25.75	685.6	232 49 47	52 49 49	.....do	151.9
					271 47 55	91 48 12	Mount Pleasant	890.2
Mount Pleasant Landing	30 38 32.16	990.5	91 17 45.62	1,214.6	18 25 25	198 25 22	.....do	566.5
					66 13 28	246 13 10	Wild Wood	1,035.8
Mount Pleasant gin	30 38 33.64	1,035.8	91 17 38.13	1,015.3	32 58 49	212 58 42	Mount Pleasant	694.9
					68 00 58	248 00 36	Wild Wood	1,237.9
Mount Pleasant stable (?)	30 38 33.40	1,028.4	91 17 30.79	819.7	44 55 28	224 55 17	Mount Pleasant	812.7
					71 15 32	251 15 6	Wild Wood	1,417.9

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Brown stable	30 36 36.95	1,137.8	91 17 49.82	1,326.9	55 33 10	235 33 1	Brown	593.5
					100 43 31	280 43 3	Kelson	1,484.8
Kelson sugar-house chimney	30 37 24.48	754.0	91 18 53.07	1,413.3	206 58 45	26 59 1	Wild Wood	1,870 2
					349 13 49	169 13 53	Kelson	1,208.4
Winter sugar-house chimney	30 36 43.60	1,342.6	91 19 02.95	78.6	261 40 28	81 40 37	.....do	494.3
					290 19 23	110 19 51	Brown	1,555.7
Barrow sugar-house chimney	30 36 1.63	50.2	91 19 10.26	273.3	245 32 6	65 32 38	.... do	1,816.4
					299 38 16	119 38 48	Gravel	1,940.2
Glennon sugar house chimney	30 34 52.92	1,629.5	91 19 06.32	168.3	212 22 3	32 22 12	Glennon	862 8
					233 49 55	53 50 23	Gravel	1,939
Randolph sugar-house chimney	30 35 24.28	747.6	91 19 16.57	441.4	264 8 15	84 8 50	.... do	1,864.4
					287 52 41	107 52 55	Glennon	772.2
Hereford sugar-house chimney	30 34 16.74	515.4	91 18 27.54	733.9	193 34 24	13 34 34	Gravel	2,335.5
					218 50 9	38 50 28	Profit Island	1,589.2
Negro church or school	30 35 14.20	437.3	91 18 59.80	1,593.1	285 59 9	105 59 44	.....do	1,930.8
					303 19 37	123 20 11	Lobdell	2,147
Clark sugar-house chimney	30 33 14.51	446.8	91 17 28.76	706.5	1 53	180 1 53	Chinn	3,506.2
					56 39	180 56 38	Chamberlain	2,016.6
Colwell sugar-house chimney	30 30 24.38	750.7	91 16 17.06	454.9	132 9 47	312 9 11	Chinn	2,581.5
					166 12 14	346 12 10	Bar	953.6
Base, east end (Vidalia)	31 33 42.59	1,311.6	91 25 18.00	474.6				
Base, west end (Vidalia)	31 35 01.020	31.4	91 26 24.010	633.1	324 13 2.4	144 13 37	East Base	2,077.272
Arnolia	31 33 33.145	1,020.9	91 26 41.285	1,088.8	189 33 12	9 33 21	West Base	2,744.5
					262 26 52.9	82 27 36.5	East Base	2,215.7
Lookout	31 33 12.153	374.3	91 25 10.763	283.9	105 9 29.1	285 8 41.7	Arnolia	2,473.4
					168 29 26	348 29 22.2	East Base	956.7
Carthage	31 31 59.571	1,834.7	91 27 29.543	779.3	203 49 36.8	23 50 2	Arnolia	3,150.5
					238 34 46	58 35 58.6	Lookout	4,289.3
Whitehall	31 32 23.444	722	91 28 31.192	822.8	233 28 17.9	53 29 15.4	Arnolia	3,607.2
					294 19 24.2	114 19 56.4	Carthage	1,784.8
Minor	31 31 1.785	55	91 29 2.113	55.8	197 58 7.4	17 58 23.6	Whitehall	2,644
					233 54 42.1	53 55 30.5	Carthage	3,021.9
Natchez	31 31 25.991	800.5	91 30 20.202	533	238 23 18.1	58 24 15.1	Whitehall	3,376.6
					289 53 12.6	109 53 53.4	Minor	2,191.1
Conti	31 30 14.554	448.2	91 30 31.045	819.3	187 24 29.5	7 24 35.8	Natchez	2,218.7
					236 11 59.2	58 12 45.7	Minor	2,760.9

Lemley	31 30 00.352	10.8	91 29 38.554	1,017.4	107 31 47.2	287 31 19.8	Conti	1,452.6
					206 56 18	26 56 37	Minor	2,122.4
Moro	31 29 10.855	334.3	91 30 40.382	1,065.8	187 9 30.8	7 9 35.7	Conti	1,977.3
					226 56 35.5	46 57 7.8	Lemley	2,233
Ivanhoe	31 28 31.223	961.7	91 30 11.918	314.6	148 23 20.3	328 23 5.4	Moro	1,433.3
					197 47 00.7	17 47 18.1	Lemley	2,882.8
Warnicott	31 27 15.890	489.4	91 31 15.257	402.8	194 34 21.4	14 34 39.6	Moro	3,658.5
					215 46 34.1	35 47 7.2	Ivanhoe	2,859.9
Ford	31 27 30.245	931.6	91 30 16.297	430.3	74 08 37.7	254 8 26.9	Warnicott	1,618.2
					183 31 19.9	3 31 22.2	Ivanhoe	1,881.6
Saint Catharine	31 26 13.229	407.5	91 29 49.037	1,294.9	130 17 33.9	310 16 48.9	Warnicott	2,984.5
					168 7 14.6	343 7 00.4	Ford	2,478.8
Ashley	31 25 48.006	1,478.5	91 31 15.468	408.4	180 7 3.9	7 04	Warnicott	2,706.7
					251 11 53.6	71 12 38.7	Saint Catharine	2,411.1
Esperance	31 25 00.357	10.9	91 28 47.888	1,264.8	110 38 29.9	290 37 13	Ashley	4,164.9
					144 15 58.9	324 15 27	Saint Catharine	2,765
Page	31 25 40.849	1,258	91 28 47.632	1,257.8	18 36.5	180 18 36.4	Esperance	1 247.1
					121 35 42.8	301 35 10.8	Saint Catharine	1,903.7
Ellis Cliff	31 24 19.865	611.8	91 26 58.173	1,536.6	113 17 26.8	293 16 29.6	Esperance	3,155.1
					130 47 28.8	310 46 31.7	Page	3,818.4
Bourbon	31 23 20.039	617.1	91 28 48.516	1,281.9	180 18 26.7	18 27	Esperance	3,089.6
					237 41 50.9	57 42 48.4	Ellis Cliff	3,448.6
Pecan	31 24 21.736	669.4	91 30 30.917	816.7	270 34 19.2	90 36 10	do	5,620.3
					305 4 30.7	125 5 24	Bourbon	3,305.9
Harper	31 23 24.827	764.6	91 29 55.309	1,461	151 46 43.5	331 46 25	Pecan	1,989.2
					274 46 15.7	94 46 50.5	Bourbon	1,770.9
Leonard	31 23 9.304	286.5	91 31 44.538	1,176.8	221 4 50.5	41 5 28.9	Pecan	2,959.6
					260 35 11.4	80 36 8.3	Harper	2,925.3
Fairview	31 24 27.657	851.8	91 31 54.010	1,426.6	274 44 35.1	94 45 18.4	Pecan	2,202.6
					354 4 43	174 4 47.9	Leonard	2,426
Rosenthal	31 22 48.931	1,507	91 34 11.85	313	230 7 51.4	50 9 3.2	Fairview	4,744.2
					260 49 55.5	80 51 12.2	Leonard	3,941.7
Glasscock	31 21 00.488	15	91 33 37.958	1,003.3	164 59 22.7	344 59 5.1	Rosenthal	3,457.8
					217 3 49.8	37 4 48.8	Leonard	4,972.8
Palmetto	31 21 00.159	4.9	91 32 00.022	0.6	90 13 53.8	270 13 2.9	Glasscock	2,588.7
					185 52 22.8	5 52 30.9	Leonard	3,998.4
Roseland	31 20 5.552	171	91 32 21.107	558	129 47 39	309 46 59	Glasscock	2,643.8
					198 20 00	18 20 11	Palmetto	1,771.7
Corena	31 20 16.816	517.9	91 31 18.574	491	78 9 8.5	258 8 36.0	Roseland	1,689.1
					140 37 25.9	320 37 4.3	Palmetto	1,726.9
Obers	31 18 49.540	1,525.6	91 31 42.210	1,116.1	156 17 11.3	336 16 51.1	Roseland	2,556.9
					193 5 11	13 5 23.3	Corena	2,759.6
Strothers	31 18 42.594	1,311.8	91 30 54.581	1,443.2	99 38 35.1	279 38 10.3	Obers	1,277.5
					167 40 13.8	347 40 1.3	Corena	2,970.3

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Winn	31 17 25.646	789.9	91 30 59.526	1,574.3	156 24 10.9	336 22 48.7	Obers	2,819.5
					183 9 29	8 9 31.6	Strothers	2,373.4
Fritz	31 16 58.517	1,802.2	91 31 52.292	1,383.2	184 27 29.9	4 27 35.1	Obers	3,429.6
					239 5 21.8	59 5 48.7	Winn	1,626.6
McElroy	31 16 10.432	321.3	91 31 43.275	1,144.8	266 32 35	26 32 57.7	Winn	2,589.4
					179 51 3.3	350 50 58.6	Fritz	1,500
Cerro Gordo	31 15 47.296	1,454.8	91 32 51.365	1,359	215 26 26.8	35 26 57.9	do	2,094.7
					248 21 46.2	68 22 21.5	McElroy	1,937.8
Home Place	31 16 19.667	605.8	91 33 47.931	1,268	248 37 44	68 38 44	Fritz	3,284.6
					305 42 56.3	123 43 25.7	Cerro Gordo	1,799.2
Allaway	31 15 43.248	1,332	91 34 18.929	500.7	216 10 10.4	36 10 26.5	Home Place	1,389.4
					266 57 29.8	86 58 14.7	Cerro Gordo	2,319.9
Wilds	31 16 30.130	927.9	91 35 7.853	207.7	278 39 36.8	98 40 18.3	Home Place	2,138.6
					318 7 23.9	138 7 49.3	Allaway	1,929
Jackson	31 16 2.508	77.3	91 35 31.661	837.5	216 30 51.2	36 31 3.6	Wilds	1,058.4
					287 7 42.2	107 8 20	Allaway	2,013.6
Point	31 16 9.553	294.2	91 36 25.051	662.6	252 45 19.6	72 45 59.7	Wilds	2,138.2
					278 43 47.8	98 44 15	Jackson	1,429
Bougère	31 16 42.706	1,315.3	91 36 58.092	1,596.7	277 33 28.4	97 34 25.6	Wilds	2,941.7
					319 25 54.5	139 26 11.7	Point	1,344
Cabin	31 15 32.765	1,009.2	91 38 12.692	335.8	222 29 28.6	42 30 7.3	Bougère	2,921.4
					248 17 49.4	68 18 45.3	Point	3,064.9
Pecan	31 14 54.474	1,677.7	91 38 4.354	115.1	169 24 12.2	349 24 7.9	Cabin	1,199.7
					226 38 33	48 39 24.5	Point	3,499.9
Kienstra	31 13 31.234	961.9	91 36 23.925	633.1	133 58 26.7	313 57 34.6	Pecan	3,692.6
					142 26 51	322 25 54.6	Cabin	4,721.5
Union Point	31 13 33.239	1,023.6	91 37 7.332	194	148 54 25.7	328 53 56.1	Pecan	2,921.7
					273 4 24.9	93 4 47.4	Kienstra	1,150.5
Peach Grove	31 11 35.340	1,088.3	91 35 49.788	1,318	150 31 27.8	330 30 47.6	Union Point	4,171
					165 47 39.7	345 47 22	Peach Grove	3,681.8
Loch Leven	31 10 15.203	468.2	91 36 45.611	1,207.9	185 25 50.1	5 26 1.3	Kienstra	6,064.4
					210 54 51.8	30 55 20.7	Peach Grove	2,876.8
Pullen	31 9 56.982	1,754.9	91 37 33.256	880.7	222 7 16.5	42 8 10.[illegible]	do	4,084.4
					246 1 12	66 1 36.9	Loch Leven	1,380.9
Island	31 9 21.984	677.1	91 36 52.888	1,400.7	135 14 4	315 13 43.1	Pullen	1,518.2
					184 42 20.1	6 42 23.9	Loch Leven	1,650.3

Black Hawk	31 9 23.573	726	91 37 34.041	901.5	181 9 29.6	1 9 30.9	Pullen	1,029.1
					272 34 3.2	92 34 24.5	Island	1,091.1
Ballamagan	31 6 46.761	1,440	91 36 45.055	1,193.7	164 57 43.6	344 57 18.3	Black Hawk	5,000.6
					177 30 54.8	357 30 50.7	Island	4,784.8
Stamp	31 6 49.740	1,531.6	91 36 00.201	5.3	85 35 26.3	265 35 3.1	Ballamagan	1,192.1
					163 25 33	343 25 5.8	Island	4,892
Coochee	31 5 42.177	1,298.9	91 36 23.841	631.9	164 13 5.7	344 12 54.7	Ballamagan	2,066.9
					196 45 16.1	16 45 28.3	Stamp	2,173
Bartlett	31 5 32.797	1,010.1	91 35 33.213	880.2	102 9 7.7	282 8 41.6	Coochee	1,372.6
					163 12 23.2	343 12 9.3	Stamp	2,475.1
Point Breeze	31 4 15.822	487.2	91 33 45.781	1,213.6	122 25 2.8	302 23 41.2	Coochee	4,962.4
					129 47 1.5	309 46 6	Bartlett	3,705.3
Block House Hill	31 4 46.865	1,443.2	91 32 54.623	1,447.7	54 49 17.6	234 48 51.2	Point Breeze	1,659.3
					108 36 36.7	288 35 14.8	Bartlett	4,435.2
Rock Hill	31 2 09.861	363.6	91 33 20.326	539	170 7 53	350 7 39.9	Point Breeze	3,937.4
					188 1 14.8	8 1 28.	Block House Hill	4,882.9
Lum's Point Base, southwest end astronomical station	31 2 29.113	896.6	91 35 17.067	453.1	221 40 12.7	41 41 26.2	.....do	5,680.1
					280 49 52.2	100 50 52.4	Rock Hill	3,152.6
Lum's Point Base, northeast end	31 3 13.738	423.1	91 34 26.424	700.5	318 17 40.4	138 18 14.5	Rock Hill	2,634.7
					44 21 10.5	224 20 44.4	Southwest Base	1,921.817
Lum	31 2 52.850	1,627.6	91 34 44.811	1,188.2	211 28 59.1	31 29 29.6	Point Breeze	2,996.4
					300 34 26.7	120 35 10.3	Rock Hill	2,602.3
Tarbert	31 00 21.361	657.8	91 35 59.965	1,590.7	203 7 43.5	23 8 22.2	Lum	5,073.3
					231 42 36.1	51 43 58.4	Rock Hill	5,393.8
Ker's Point	31 00 49.324	1,518.8	91 36 47.881	1,270	220 37 13.3	40 38 16.7	Lum	5,012.5
					304 6 48.6	124 7 13.3	Tarbert	1,535.3
Tregar	31 00 15.265	470.1	91 37 32.290	856.6	228 18 57.5	49 19 20.4	Ker's Point	1,577.3
					265 36 36	85 37 23.5	Tarbert	2,456.4
Eastman	30 58 28.864	888.8	91 38 37.939	1,006.7	207 59 21.5	27 59 55.3	Tregar	3,710.9
					230 24 46.4	50 26 7.7	Tarbert	5,437.8
Red River	30 58 50.280	1,548.5	91 39 8.546	226.8	224 17 27.3	44 18 16.9	Tregar	3,656.7
					309 4 28.9	129 4 44.7	Eastman	1,046.2
Angola	30 57 31.140	959	91 39 1.926	51.1	175 52 41.2	355 52 37.7	Red River	2,443.5
					199 42 6.1	19 42 18.4	Eastman	1,898.2
Kingsbury	30 57 27.872	858.4	91 39 45.243	1,200.8	200 59 29.3	20 59 48.2	Red River	2,718.3
					264 59 37.5	84 59 59.9	Angola	1,154.1
Hog Point	30 55 36.152	1,113.4	91 38 42.012	1,115.5	153 59 55.1	333 59 22.6	Kingsbury	3,828.1
					171 30 39.3	351 30 29.1	Angola	3,560.4
Acklin	30 56 5.523	170.1	91 38 10.813	287	42 28 59	222 28 43	Hog Point	1,226.5
					135 20 27.8	315 19 39.2	Kingsbury	3,565.7
Miles Point	30 55 12.251	377.2	91 37 29.082	772.1	110 49 4.9	290 48 27.4	Hog Point	2,071.5
					145 58 12.7	325 57 51.2	Acklin	1,979.6
Cut Off	30 55 32.442	999.1	91 37 10.204	270.8	38 52 20.6	218 52 10.9	Miles Point	798.7
					122 20 34.1	302 20 2.9	Acklin	1,904.5

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Old River	30 54 48.887	1,505.4	91 36 29.975	795.9	114 38 4.3	294 37 33.9	Miles Point	1,726.5
					141 28 20.8	321 28 00.1	Cut Off	1,714.7
Cheatham	30 55 19.372	596.5	91 36 9.667	256.6	29 52 24.5	209 52 14.1	Old River	1,082.7
					104 3 51	284 3 19.9	Cut Off	1,656.9
Saint Bernard	30 55 3.431	105.7	91 34 9.186	243.9	83 10 39.7	263 9 27.4	Old River	3,765.1
					98 44 00.3	278 42 58.4	Cheatham	2,236.4
Rowe	30 55 30.095	926.9	91 34 4.477	118.9	8 39 26.3	188 39 23.9	Saint Bernard	830.6
					84 20 7.1	264 19 2.8	Cheatham	3,340.2
Letherman	30 54 35.692	1,099.3	91 33 5.175	137.5	116 41 16	296 40 43.1	Saint Bernard	1,902.3
					136 46 48.2	316 46 17.7	Rowe	2,299.2
Como	30 54 30.037	925	91 31 53.172	1,411.9	95 12 34.7	275 11 57.7	Letherman	1,919.9
					117 57 17.6	297 56 10.1	Rowe	3,946.7
Stump	30 53 59.068	1,819	91 32 25.284	671.5	136 47 49.7	316 47 29.2	Letherman	1,547.3
					221 47 56.8	41 48 13.3	Como	1,279.3
Wade	30 52 39.770	1,224.8	91 31 13.56	360.1	142 2 51.9	322 2 15.1	Stump	3,097.2
					162 47 19.4	342 46 59.1	Como	3,555.9
Stevenson	30 52 32.038	986.7	91 31 41.39	1,099.4	156 29 39.9	336 29 17.4	Stump	2,922.7
					252 8 35.2	72 8 49.5	Wade	776.7
Douglas	30 51 19.844	611	91 31 42.774	1,136.5	180 56 50	56 50.7	Stevenson	2,223.5
					197 29 54	17 30 9	Wade	2,580.8
Brandon	30 50 59.611	1,835.8	91 31 7.407	196.8	123 32 57	303 32 38.9	Douglas	1,127.5
					176 58 00.8	356 57 57.6	Wade	3,088.8
Cotton	30 49 7.718	237.7	91 31 51.781	1,376.3	183 21 57.1	3 22 1.7	Douglas	4,075.9
					198 53 19.2	18 53 41.9	Brandon	3,642
Tunica Island	30 49 18.491	569.3	91 31 14.576	387.5	71 27 21.6	251 27 2.5	Cotton	1,043
					183 30 1	3 30 4.7	Brandon	3,119.9
Keller	30 47 52.998	1,632.1	91 31 21.613	574.5	160 47 18.1	340 47 2.7	Cotton	2,436.8
					184 3 47.6	4 3 51.2	Tunica Island	2,639.4
Raccourci Point	30 47 58.123	1,789.9	91 32 00.931	24.7	186 28 26.8	6 28 31.5	Cotton	2,157
					278 35 00.1	98 35 20.2	Keller	1,057.1
Bougeoir	30 47 15.112	465.4	91 32 24.978	664	205 45 50.3	25 46 2.6	Raccourci Point	1,470.8
					235 17 26.8	55 17 59.2	Keller	2,049.2
Shaw	30 47 37.584	1,157.4	91 32 38.514	1,023.9	332 31 21.2	152 31 28.1	Bougeoir	750
					237 39 40.1	57 39 59.3	Raccourci Point	1,182.5
Schultz	30 47 12.330	379.6	91 33 36.529	971.3	243 14 23.3	63 14 53	Shaw	1,727.4
					267 24 59.5	87 25 36.1	Bougeoir	1,004.3

[illegible]	[illegible]	[illegible]	[illegible]		257 39 20.2	77 40 9.8	Schultz	[illegible]
Neal	30 46 33.438	1,029.7	91 34 41.994	1,116.7	127 06 32.8	307 06 16.7	New Texas	1,050.4
					216 20 5.6	36 20 35.2	Rew's ditch	2,592.3
Vignes	30 45 10.064	309.8	91 35 26.432	703.1	186 07 53.3	6 07 59.9	New Texas	3,219.7
					204 42 47.9	21 43 10.6	Neal	2,826.4
Leonard	30 45 12.477	384.3	91 34 56.455	1,474.8	84 50 51.7	264 50 35.9	Vignes	827.3
					188 10 11.8	8 10 18.7	Neal	2,518.7
Morganza	30 44 11.358	349.7	91 34 46.125	1,227	149 19 54.4	329 19 33.8	Vignes	2,101.8
					172 29 21.4	352 29 16.6	Leonard	1,898.4
Cat Island	30 44 26.684	760.2	91 33 57.443	1,528.1	72 25 13.1	252 24 48.2	Morganza	1,358.5
					133 38 56.5	313 38 26.8	Leonard	2,132.4
Bergeron	30 43 44.636	1,374.6	91 33 42.090	1,120	115 47 29.3	295 46 56.6	Morganza	1,891.7
					161 41 18.4	341 41 10.6	Cat Island	1,299.1
McCallum's Point	30 44 10.059	309.7	91 35 46.402	1,234.4	75 44 13.2	255 43 14.1	Bergeron	3,175.9
					97 22 18	277 21 11.1	Cat Island	3,514.9
Fisher	30 44 37.298	1,148.5	91 31 39.820	1,059.4	11 46 35.8	191 46 32.4	McCallum's Point	856.9
					102 17 29	282 16 37	Cat Island	3,681.2
Hopkins	30 43 50.928	1,568.3	91 30 4.697	125	102 17 29	282 16 37	McCallum's Point	2,769.0
					119 26 30.2	299 25 41	Fischer	2,905.7
Woodyard	30 44 12.220	376.3	91 28 47.200	1,255.6	72 21 44.4	252 21 4.8	Hopkins	2,163.4
					99 33 31.1	279 32 2.9	Fischer	4,656.6
Saint Maurice	30 43 44.873	1,381.9	91 28 42.966	1,143	94 54 26	274 53 44.2	Hopkins	2,182.3
					172 23 1.6	352 22 59.4	Woodyard	849.7
Bockel	30 44 32.882	1,012.6	91 27 12.909	343.3	58 19 35.5	238 18 49.5	Saint Maurice	2,815.2
					75 46 19.3	255 45 31.1	Woodyard	2,587.7
Red Store	30 44 3.492	107.6	91 27 00.303	8.1	78 9 3.4	258 8 11	Saint Maurice	2,790.7
					159 40 20.2	339 40 13.8	Bockel	965.2
Coulon	30 44 51.946	1,599.6	91 25 4.255	113.2	64 12 39.6	244 11 40.3	Red store	3,428.7
					80 16 32.2	260 15 26.5	Bockel	3,472.1
Willow Bar	30 45 20.079	618.3	91 25 21.347	567.8	332 18 45.8	152 18 54.5	Coulon	978.4
					63 54 47.7	243 53 50.7	Bockel	3,304.2
Magee	30 45 50.008	1,540	91 24 9.770	259.8	39 1 40.5	219 1 12.6	Coulon	2,301.5
					64 10 15.6	244 9 39.	Willow Bar	2,115
Bovard	30 45 6.405	197.3	91 23 58.076	1,544.7	75 48 32	255 47 58.2	Coulon	1,815.7
					166 57 36.6	346 57 30.7	Magee	1,378.3
Depot, astronomical station	30 45 52.739	1,624.2	91 23 18.456	490.7	36 26 54.3	216 26 34	Bovard	1,773.8
					86 28 34.7	266 28 8.6	Magee	1,367.2
Base, northwest end (Point Coupee)	30 45 8.636	265.9	91 23 24.030	639.1	85 39 51.3	265 39 33.9	Bovard	908.1
					186 13 42.5	6 13 45.4	Depot	1,366.2
Base, southeast end (Point Coupee)	30 44 49.203	1,515.2	91 22 35.008	981.1	114 39 24.9	294 38 59.8	Northwest base	1,434.672
					149 26 12.5	329 25 50.3	Depot	2,272.4

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Alexander Creek	30 45 28.236	869.6	91 22 22.784	606	15 8 10.1	195 8 3.9	Southeast base	1,245.2
					69 40 23.9	249 39 52.6	Northwest base	1,737.2
Crother's	31 28 26.02	801.3	91 31 44.18	110.3	263 22 48	83 23 15	Ivanhoe	1,388.8
					323 39 1	143 39 26	Ford	2,133
Shields	31 25 12.65	389.6	91 29 47.96	1,266.7	179 07 25	359 7 24	Saint Catharine	1,866
					241 24 5	61 24 36	Page	1,814.5
Surgett	31 24 20.02	616.5	91 28 48.14	1,271.5	180 18 8	18 8	Esperance	1,242.4
					270 5 8	90 6 5	Ellis Cliff	2,904.8
Butler's Bluff	31 25 20.27	624.2	91 25 42.88	1,132.3	46 54 56	226 54 17	Ellis Cliff	2,723.4
					97 24 46	277 23 10	Page	4,920.5
Rivers	31 23 39.08	1,203.6	91 33 19.45	513.7	236 27 23	56 28 7	Fairview	2,708
					290 4 41	110 5 30	Leonard	2,620.1
Ferguson	31 19 20.55	632.8	91 30 59.18	1,564.4	354 3 37	174 3 39	Strother's	1,175.4
					49 59 17	229 58 55	Ober's	1,485.5
Ville	31 18 1.73	53.3	91 30 53	1,401.4	138 31 55	318 31 29	Ober's	1,965
					178 05 55	358 5 54	Strother's	1,259.1
Gin-house stack near Crother's	31 28 10.96	522.4	91 31 21.33	563	220 25 20	40 26 14	Lemley	4,183
					256 31 5	76 31 41	Ivanhoe	1,884.3
Smoke-stack north of Crother's	31 28 43.86	1,350.7	91 31 8.80	232.2	284 32 4	104 32 34	Ivanhoe	1,551.2
					347 28 40	167 28 42	Crother's	562.8
Crother's house chimney	31 28 47.63	1,466.8	91 31 1.03	27.2	217 18 6	37 18 17	Moro	899.2
					7 34 27	187 34 20	Warnicott	2,850.4
Up-river dove-cote	31 28 47.87	1,474.2	91 30 57.94	1,529.2	292 52 45	112 53 9	Ivanhoe	1,318.5
					13 45 55	193 45 52	Crother's	692.6
Down-river dove-cote	31 28 46.92	1,444.9	91 30 58.17	1,535.1	291 36 5	111 36 29	Ivanhoe	1,313.1
					13 51 15	193 51 12	Crother's	662.8
Belfry north of Crother's	31 28 42.74	1,316.2	91 31 10.38	273.9	282 56 46	102 57 16	Ivanhoe	1,583.4
					2 45 29	182 45 26	Warnicott	2,678.1
Gin chimney near Warnicott	31 27 9.40	289.5	91 31 40.06	1,081.4	223 00 4	43 00 51	Ivanhoe	3,446
					253 58 12	73 58 56	Ford	2,325.5
Government light below Ashley	31 24 33.86	1,042.8	91 31 5.13	135.4	175 8 16	355 8 11	Warnicott	3,153.9
					238 53 15	58 53 54	Saint Catharine's	2,346.8
Government light near Shields	31 25 19.17	590.4	91 30 16.12	426.7	03 14 42	23 14 56	.....do	1,812.1
					254 3 3	74 3 49	Page	2,430.5
Ashley gin chimney	31 26 11.13	342.8	91 31 29.94	790.5	268 35 58	88 36 51	Saint Catharine	2,665.5
					331 47 6	151 47 14	Ashley	899

Rosenthal's store, river end	31 23 51.54	1,587.2	91 33 24.82	655.6	258 32 32	78 34 3	Pecan	4,687.2
					296 8 30	116 9 22	Leonard	2,951.3
Deer Park gin chimney	31 24 29.28	901.7	91 33 2.67	70.5	271 34 30	91 35 6	Fairview	1,814.7
					320 1 51	140 2 32	Leonard	3,213.4
Rivers' gin chimney	31 24 30.72	946.1	91 33 36.30	958.8	271 59 23	92 00 16	Fairview	2,703.9
					310 19 34	130 20 32	Leonard	3,873.5
Walton's gin chimney	31 20 23.07	710.5	91 32 13.48	356.3	277 33 16	97 33 45	Corena	1,464.1
					20 30 4	200 30	Roseland	576
Roseland gin chimney	31 19 27.36	839.5	91 31 50.03	1,322.6	145 8 46	325 8 30	Roseland	1,437.5
					208 34 47	28 35 3	Corena	1,738.6
Ober's gin chimney	31 18 28.02	862.9	91 32 26.78	708	235 3 41	55 4 27	Ferguson	2,825.1
					259 34 1	79 34 49	Strother's	2,478.8
Home Place store gable	31 16 22.29	686.4	91 33 48.08	1,271.7	305 43 45	125 44 14	Cerro Gordo	1,848.4
					357 9 27	177 9 27	Home Place	60.8
Fairview Landing, river front of new store	31 19 49.76	1,532.4	91 31 51.22	1,358.9	226 00 6	46 00 23	Corena	1,199.9
					324 5 16	144 5 45	Strother's	2,553.6
House at Woodyard chimney	31 16 21.25	654.4	91 34 30.09	795.9	345 50 8	165 50 14	Allaway	1,206.9
					70 29 24	250 28 52	Jackson	1,728
Bayou Sara gin chimney	30 45 50.68	1,837.8	91 23 23.57	626.8	300 54 58	120 55 29	Alexander Creek	1,884.5
					26 28	180 26 28	Northwest base	1,572
Saint Francisville Catholic church cross	30 46 26.82	825.8	91 23 25.55	679.4	335 54 24	155 54 50	Southeast base	3,293.2
					359 2 17	179 02 18	Northwest base	2,408.2
Saint Francisville Episcopal church	30 46 32.40	997.7	91 23 14.55	326.8	341 41 18	161 41 38	Southeast base	3,347.3
					5 35 8	185 35 3	Northwest base	2,591.7
Doyle's chimney	30 45 21.07	648.9	91 22 12.68	337.2	31 10 54	211 10 42	Southeast base	1,147
					119 8 42	299 8 8	Depot	2,002.7
Colored church belfry	30 44 30.99	954.3	91 22 13.59	361.5	134 33 39	314 33 28	Southeast base	799.4
					172 6 23	352 6 18	Alexander Creek	1,779.6
Bayou Sara, vane	30 45 58.17	1,791.8	91 23 35.43	942.2	295 29 54	115 30 31	do	2,140.6
					348 45 18	168 45 24	Northwest base	1,555.1
Bayou Sara school-house	30 46 4.52	139.2	91 23 38.22	1,016.3	299 6 44	119 7 23	Alexander Creek	2,296.3
					16 26 42	196 26 32	Bovard	1,866
Bayou Sara Methodist church	30 46 8.34	256.7	91 23 40.59	1,079.4	300 49 27	120 50 7	Alexander Creek	2,409.6
					346 31 43	166 31 51	Northwest base	1,890.5
Bovard House	30 45 1.58	48.7	91 23 42.73	1,136.5	109 59 36	289 59 28	Bovard	434.5
					246 23 56	66 24 6	Northwest base	542.6
Bovard sugar-house chimney	30 44 52.52	1,617.4	91 13 52.06	1,384.6	109 40 22	289 39 36	Willow Bar	2,521.7
					165 6 22	345 6 12	Magee	1,832
Saint Francis church	30 44 52.08	1,603.9	91 24 56.27	1,496.6	142 16 57	322 16 44	Willow Bar	1,090.2
					214 43 37	34 44 1	Magee	2,170.9
Claiborne sugar-house chimney	30 43 47.36	1,458.3	91 27 36.87	980	112 15 21	292 14 45	Woodyard	2,021.5
					204 27 3	24 27 15	Bockel	1,540
Pederre overseer's house	30 43 43.58	1,342.1	91 28 53.75	1,429.9	191 10 2	11 10 5	Woodyard	898.5
					262 2 34	82 2 40	Saint Maurice	289.6

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Morrison's sugar-house chimney	30 43 28.40	874.5	91 31 37.67	1,002.3	169 43 54	349 43 50	McCallum's Point	1,303.4
					178 26 56	358 26 55	Fischer	2,122.1
Stewart sugar-house chimney	30 43 43.50	1,339.6	91 31 55.75	1,483.2	194 20 33	14 20 41	Fischer	1,710.2
					196 54 57	16 55 2	McCallum's Point	855
New Texas chimney	30 46 10.77	321.6	91 35 38.08	1,012.6	206 8 43	26 8 56	New Texas	1,483.5
					350 35 6	170 35 12	Vignes	1,895
New Texas gin chimney	30 46 13	400.3	91 35 34.22	910	203 34 1	23 34 12	New Texas	1,378.4
					353 58 40	173 53 44	Vignes	1,948.9
New Texas flag-staff	30 46 28.15	866.8	91 35 28.61	760.9	262 30 30	82 30 54	Neal	1,250.3
					358 37 3	178 37 4	Vignes	2,405.3
Quitman statue	30 46 26.20	806.8	91 35 25.66	682.4	200 40 35	20 40 41	New Texas	915.7
					340 30 44	160 30 59	Leonard	2,408.1
Fischer's Landing	30 47 18.95	583.5	91 34 54.17	1,440.1	12 12 5	192 11 48	Vignes	4,060.6
					33 48 30	213 48 20	New Texas	923.0
Bougeoir gin	30 46 42.34	1,368.8	91 35 31.13	827.7	232 29 39	52 29 48	New Texas	590.9
					281 50 28	101 50 48	Neal	1,334.9
Ober gin	30 46 28.13	866.2	91 35 35.80	952	263 28 39	83 29 7	Neal	1,440.3
					335 15 48	155 16 9	Leonard	2,564.9
New House	30 47 21.04	648	91 31 47.90	1,273.5	110 44 22	290 43 56	Shaw	1,438.9
					163 7 32	343 7 25	Raccourci Point	1,193.4
Barrow's chimney	30 47 39.47	1,215.5	91 31 31.60	840.2	88 7 59	268 7 25	Shaw	1,779.8
					126 23	306 22 45	Raccourci Point	968.4
Wade shed	30 52 27.49	846.6	91 31 7.38	106	10 51 27	190 51 4	Cotton	6,264.0
					156 34 6	336 34 3	Wade	412.6
Deserted cabin	30 52 40.63	1,251.2	91 31 14.78	392.5	69 29 37	249 29 23	Stevenson	754.7
					142 13 26	322 12 50	Stump	3,056.5
Tunica Landing	30 55 15.19	467.8	91 33 1.72	45.7	4 18 1	184 17 59	Letherman	1,220.2
					105 23 37	285 23 5	Rowe	1,728
Coal-yard house	30 55 00.87	26.8	91 34 1.68	44.6	111 33 27	291 33 23	Saint Bernard	214.5
					175 16 15	355 16 14	Rowe	903
Old River House	30 54 48.68	1,497.5	91 36 36.54	970.2	146 28 33	326 28 16	Cut-off	1,618.3
					217 00 19	37 00 33	Cheatham	1,185.3
Proctor chimney	30 54 47.88	1,474.4	91 36 7.07	187.7	129 18 27	309 17 55	Cut-off	2,166.5
					175 55 38	355 55 37	Cheatham	972.2
Smithland gin	30 55 44.87	1,381.8	91 39 6.17	163.8	181 58 22	1 58 24	Angola	3,274.4
					246 36 24	66 30 52	Acklen	1,601.3

Hog Point Landing	30 55 50.73	1,562.4	91 39 00.81	21.5	179 27 10	359 37 9	Angola	2,092.3
					251 3 45	71 4 11	Acklen	1,403.1
Miles chimney	30 55 16.66	518.1	91 38 21.88	581	151 17 39	331 16 56	Kingsbury	4,606.9
					191 2 24	11 2 30	Acklen	1,532.9
Smith chimney	30 55 52.05	1,608	91 39 3.62	96	180 50 35	50 36	Angola	3,051.7
					253 30 59	73 31 26	Acklen	1,462
Red River warehouse	30 58 00.20	6.2	91 39 50.16	1,331.2	245 15 28	65 16 5	Eastman	2,110.2
					304 56 58	124 57 23	Angola	1,561.6
Red River light	30 58 35.32	1,087.7	91 39 26.16	694.2	278 49 55	98 50 20	Eastman	1,294.9
					341 58 38	161 58 50	Angola	2,078.5
Kingsbury store	30 57 24.57	756.8	91 39 46	1,220.8	191 9 10	11 9 10	Kingsbury	108.6
					260 10 58	80 11 21	Angola	1,187.1
Red River school	30 58 11.06	340.5	91 39 58.86	1,562.1	255 40 23	75 41 5	Eastman	2,216.1
					309 8 5	129 8 34	Angola	1,947.9
Tregar's chimney	30 59 27.59	849.7	91 38 49.74	1,080.8	357 38 54	177 38 55	Eastman	1,810.2
					24 54 29	204 53 56	Kingsbury	4,065
Black Hawk gin	31 9 32.43	998.7	91 37 50.68	1,342.2	211 24 23	31 24 82	Bullen	885.9
					301 44 50	121 44 59	Black Hawk	518.4
Tower	31 13 4.87	150	91 37 35.91	950.5	220 53 22	40 53 37	Union Point	1,155.7
					314 27 19	134 28 14	Peach Grove	3,936.2
Union Point gin	31 12 51.92	1,599	91 37 43.16	1,142.3	216 41 58	36 42 17	Union Point	1,586.9
					240 00 7	60 00 48	Kienstra	2,421.6
Bougère gin	31 16 48.41	1,490.7	91 36 53.20	1,407.2	28 12 50	208 12 13	Pecan	3,962.2
					36 18 22	216 18 19	Bougère	217.9
Bougère chimney	31 16 44.87	1,381.8	91 36 58.99	1,428.1	324 51 21	144 51 36	Point	1,330
					28 42 30	208 41 54	Pecan	3,876.1
Base, east end (Vidalia)	31 33 42.59	1,311	91 25 18	474.6				
Base, west end (Vidalia)	31 35 1.02	31.4	91 26 24.01	683	324 13 2.4	144 13 37	East base	2,977.272
Giles	31 36 4.48	138.	91 23 4	1,159.8	29 34 1.8	209 33 12.6	East base	5,023.8
					65 9 8.5	245 7 44.7	West base	4,649.2
Lookout	31 33 12.15	374.2	91 25 10.76	283.7	203 18 43.2	23 19 28.6	Giles	5,779.4
					168 29 25.6	348 29 21.8	East base	956 7
Natchez Catholic Church-spire cross	31 33 28.70	883.9	91 24 6.75	178	73 12 25.6	253 11 52.1	Lookout	1,763.4
					187 7 32.4	7 7 44.3	Giles	4,835.1
Palo Alto (or Palo Alto 2)	31 34 46.02	1,417.2	91 25 9.80	258.3	103 17 22.1	283 16 43.2	West base	2,010 4
					6 18 56.5	186 18 52.2	East base	1,965.4
Gaither (or Gaither 2)	31 33 1.10	33.9	91 26 47.59	1,255.1	262 24 2	82 24 53	Lookout	2,576.4
					241 35 18	61 36 6	East base	2,686.2
Government Light, Natchez Island	31 30 14.07	433.4	91 30 30.86	814.3	287 1 12	107 1 39	Lemley	1,443.5
					351 1 57	171 2 7	Ivanhoe	3,206.9
Tall Pine	31 26 7.65	235.6	91 26 5.19	137	22 51 37	202 51 9	Ellis Cliff	3,602.5
					64 15 45	244 14 20	Esperance	4,770.3
Government Light, Hutchins' Landing	31 24 22.32	687.4	91 27 9.76	257.8	53 41 7	233 40 15	Bourbon	3,237.9
					133 6 18	313 5 27	Page	3,540.2

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Leonard's gin stack	31 23 .89	56.1	91 31 18.44	487.3	108 28 41	288 28 27	Leonard	727.1
					207 1 28	27 1 53	Pecan	2,763
Corena gin stack	31 19 58.96	1,815.8	91 31 00.40	10.6	27 20 45	207 20 23	Obers	2,407.2
					138 52 4	318 51 54	Corena	730.4
Government Light, Deadman's Bend	31 16 14.82	456.5	91 31 42.30	1,118.9	65 4 26	245 3 50	Cerro Gordo	2,014.8
					168 53 28	348 53 23	Frits	1,371.5
Cerro Gordo gin stack	31 15 39.05	1,202.6	91 32 54.34	1,437.5	131 26 5	311 25 37	Home Place	1,899.8
					197 21 32	17 21 34	Cerro Gordo	284.4
Bluff gin	31 1 46.63	1,436	91 32 50.19	1,331.1	62 27 56	242 26 18	Tarbert	5,677.5
					131 49 55	311 49 39	Rock Hill	1,072.5
Langside chimney	31 1 58.56	1,803.4	91 34 44.22	1,172.7	179 27 58	359 27 58	Lum	1,671.8
					261 6 16	81 6 59	Rock Hill	2,252
Langside gin	31 1 46.27	1,425	91 34 40.29	1,068.5	58 27 13	238 25 44	Tregar	5,354.1
					62 37 15	242 36 9	Ker's Point	3,811.4
Tarbert's stable	31 00 57.96	1,784.9	91 35 29.52	783	82 42 35	262 41 55	Ker's Point	2,095.6
					237 7 16	57 8 23	Rock Hill	4,079.6
Riverside chimney	31 3 18.97	584.2	91 30 46.10	1,223.4	62 19 23	242 15 54	Tregar	12,168.6
					82 46 28	262 44 25	Lum	6,380.7
Tarbert House	31 1 14.69	452.4	91 35 20.65	547.7	71 20 57	251 20 12	Ker's Point	2,442.1
					197 27 8	17 27 27	Lum	3,168.8
Clarksville chimney	31 3 46.04	1,417.8	91 33 12.48	330.8	56 13 4	236 12 16	Lum	2,945.6
					136 5 25	316 5 8	Point Breeze	1,272.9
Loch Leven Landing	31 10 7.72	237.7	91 36 49.78	1,318.2	73 58 26	253 58 4	Pullen	1,197.8
					205 37 35	25 37 37	Lock Leven	255.5
Loch Leven gin	31 10 27.06	833.3	91 36 29.83	790	41 1 9	221 00 36	Black Hawk	2,591.3
					61 7 40	241 7 7	Pullen	1,918.2
Kienstra upper store	31 13 33.71	1,088.1	91 36 23.59	624.3	346 12 32	166 12 49	Peach Grove	3,753.5
					89 17 2	269 16 39	Union Point	1,157.8
Kienstra lower store	31 13 17.58	541.4	91 36 14.82	392.3	109 8 3	289 7 36	Union Point	1,470.9
					150 12 7	330 12 2	Kienstra	484.3
Kienstra chimney	31 13 39.34	1,211.4	91 36 23.34	631	30 17	180 30 17	Kienstra	249.8
					80 43 35	260 43 13	Union Point	1,166.3
Jackson gin	31 16 04.98	153.4	91 36 12.52	331.1	113 00 57	293 00 50	Point	300.2
					133 56 42	313 56 18	Bougère	1,674.3
Jackson's chimney	31 15 58.65	1,806.2	91 36 17.59	465.3	141 42 13	321 41 52	Bougère	1,728.7
					149 32 56	329 32 52	Point	359.3
Natchez Astronomical Station, transit of 1878	31 33 27.16	836.5	91 24 5.20	197.1				

Wade House	30 52 57.11	1,758.8	91 31 19.58	520.1	36 53 34	216 58 23	Stevenson	965.2
					137 33 37	317 33 3	Stump	2,585.9
Dunham's Bar	31 36 6.13	188.8	91 26 26.96	710.6	270 39 58.5	90 41 23.9	Giles	4,206
					357 46 52.3	177 46 53.8	West Base	2,006.8
Ralston	31 35 24.70	760.7	91 27 6.86	180.9	219 30 05.4	39 30 26.3	Dunham's	1,653.7
					302 50 38.8	122 51 1.2	West Base	1,344.8
Waterloo, 2	31 36 19.80	609.8	91 28 41.39	1,090.8	276 45 53	96 47 3.4	Dunham's Bar	3,568.5
					304 14 48.7	124 15 38.2	Ralston	3,014.8
Bullock	31 37 33.69	1,037.6	91 28 57.89	1,525.3	304 7 11.1	124 8 30.3	Dunham's Bar	4,806.1
					349 10 33.7	169 10 42.5	Waterloo, 2	2,316.9
Goodhope	31 38 17.82	548.8	91 27 20.68	544.9	30 20 33.6	210 19 51.3	.....do	4,211.5
					62 3 35.7	242 2 44.7	Bullock	2,900 1
Faucett	31 37 40.79	1,256.1	91 27 9.59	252.7	85 37 34.8	265 36 38	.... do.	2,862.5
					165 38 3.1	345 37 57.3	Goodhope	1,177.3
Connor	31 37 51.44	1,584.1	91 25 35.93	946.7	82 26 24.3	262 25 35.2	Faucett	2,490
					106 24 38	286 23 43.1	Goodhope	2,877.4
Brenham	31 37 14.83	456.7	91 25 19.38	510.7	105 23 49	285 22 51.2	Faucett	3,012.7
					158 50 58.1	338 50 49.4	Connor	1,208 8
Rifle Point	31 37 58.53	1,802.5	91 24 58.77	1,548.5	21 59 00.3	201 58 49.5	Brenham	1,451.4
					77 25 38.8	257 25 19.3	Connor	1,003.5
Elysian Fields	31 37 21.58	664.6	91 24 22.72	598.7	82 5 2.6	262 4 32.9	Brenham	1,507.6
					140 9 10.5	320 8 51.6	Rifle Point	1,482.4
Vancluse	31 38 43.86	1,350.7	91 23 55.90	1,472.8	15 35 10.1	195 34 56.	Elysian Fields	2,631.1
					49 52 45.2	229 52 12.2	Rifle Point	2,166.5
Bluff	31 38 43.85	1,350.4	91 23 11.96	314.3	36 21 48.7	216 21 11.5	Elysian Fields	3,146.7
					90 00 56.6	270 00 33.5	Vancluse	1,158.5
Davis	31 39 46.75	1,439.8	91 23 37.62	990.9	340 44 18.3	160 44 31.8	Bluff	2,052.1
					13 57 37.7	193 57 28.1	Vancluse	1,995 9
Quitman	31 40 37.87	1,166.3	91 22 56.52	1,488.6	6 35 39.6	186 35 31.5	Bluff	3,535.2
					34 30 50.4	214 30 28.8	Davis	1,910.9
Shamrock	31 40 30.20	930.1	91 53 44.48	1,171.4	259 24 33.4	79 24 58.6	Quitman	1,285.1
					352 18 37.9	172 18 41.5	Davis	1,350.6
Fairchild	31 41 39.86	1,227.6	91 23 14.21	374.2	346 17 5.7	166 17 15	Quitman	1,965.3
					20 23 11.6	200 22 55.7	Shamrock	2,288.8
Canebrake	31 42 06.20	6.2	91 24 9.95	262.1	293 6 31.9	113 7 1.2	Fairchild	1,596
					346 23 34.2	166 23 47.6	Shamrock	2,852
Duck Bar	31 43 2.42	74.6	91 23 24.65	649	353 49 49.9	173 49 55.4	Fairchild	2,557.6
					31 54 21.3	211 53 57.5	Canebrake	2,257.3
Hole in Wall	31 43 13.71	422.4	91 24 9.46	249.1	286 25 37.3	106 26 00.8	Duck Bar	1,229.9
					19 50.2	180 19 49.9	Canebrake	2,264.2
Wilson	31 43 34.95	1,076.4	91 22 58.45	1,538.5	34 32 57.3	214 32 43.5	Duck Bar	1,216.4
					70 43 24.1	250 42 46.8	Hole in Wall	1,980.5
L'Argent	31 44 28.46	876.5	91 23 42.49	1,118.2	324 52 41.3	144 53 4.5	Wilson	2,015
					17 8 34.5	197 8 20.3	Hole in Wall	2,409.3

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Burnett	31 44 54.48	1,677.8	91 21 30.97	815	43 14 21.9	223 13 35.9	Wilson	3,362
					76 58 38.8	256 57 29.6	L'Argent	3,553.3
Cole's Island	31 46 18.22	561.2	91 21 59.24	1,558.6	343 54 31.4	163 54 46.3	Burnett	2,684.2
					17 13 30.4	197 12 59.2	Wilson	5,264.6
Race Course	31 45 59.34	1,827.5	91 22 44.55	1,172.4	244 00 12.2	64 00 36.	Cole's Island	1,326.5
					315 53 19.7	135 53 58.4	Burnett	2,782.2
Service	31 47 6.89	212.3	91 21 59.94	1,576.8	359 17 49.2	179 17 49.6	Cole's Island	1,499.4
					29 26 1.6	209 25 38.1	Race Course	2,388.9
Waterproof	31 48 5.39	166	91 22 56.59	1,488.5	320 24 7.5	140 24 37.3	Service	2,838.2
					355 20 8.5	175 20 14.8	Race Course	3,895.3
Ashland	31 48 25.37	781.5	91 20 49.40	1,299.3	37 31 9.5	217 30 32.3	Service	3,047.5
					79 35 8.7	259 34 1.7	Waterproof	3,401.9
Golman	31 48 55.29	1,702.9	91 21 18.77	493.6	320 1 28.6	140 1 44.1	Ashland	1,202.3
					59 9 29.5	239 8 37.9	Waterproof	2,997.2
Buena Vista	31 49 4.48	138	91 19 38.29	1,007	57 13 30.2	237 12 52.7	Ashland	2,224.6
					83 53 37.2	263 52 44.2	Golman	2,657.3
Kemp's Landing	31 49 47.47	1,462	91 19 44.54	1,171.1	352 55 28.6	172 55 31.9	Buena Vista	1,334.3
					57 2 30.2	237 1 40.5	Golman	2,953.7
Spithead	31 49 23.56	725.6	91 18 1.30	34.3	77 2 8.2	257 1 17.1	Buena Vista	2,617.1
					105 11 14	285 10 19.6	Kemp's Landing	2,818
Harper's Island	31 50 31.62	973.9	91 16 1.82	47.8	56 17 46	236 16 43	Spithead	3,777.1
					76 56 39.7	256 54 42.3	Kemp's Landing	6,012.2
Pecon Grove	31 49 54.98	1,693.3	91 15 47.50	1,248.8	74 37 45.5	254 36 34.9	Spithead	3,649.5
					161 32 39.1	341 32 31.5	Harper's	1,189.6
CXI Bar	31 50 28.38	874.1	91 14 19.96	523.9	65 55 54.8	245 55 8.6	Pecan Grove	2,522
					92 8 17.2	272 7 23.4	Harper's Island	2,681
Forman	31 50 8.46	260.6	91 13 48.62	1,278.3	82 26 39.1	262 25 36.4	Pecan Grove	3,153.4
					126 42 14.2	306 41 57.7	CXI Bar	1,026.8
Lee's Point	31 51 6.88	211.9	91 13 15.05	395.7	26 8 .2	206 7 42.5	Forman	2,004.1
					55 12 13.2	235 11 39	CXI Bar	2,077.4
Rodney	31 51 14.86	457.7	91 12 26.35	692.8	46 36 45.3	226 36 1.9	Forman	2,976.7
					79 8 15.5	259 7 52.8	Lee's Point	1,303.6
Clark	31 52 35.12	1,081.7	91 13 34.49	906.4	324 4 13.8	144 4 49.8	Rodney	3,062.8
					349 20 56.6	169 21 6.9	Lee's Point	2,705.5
Lewis	31 52 24.36	750.3	91 14 22.01	578.5	255 8 .1	75 8 25.2	Clark	1,202.2
					305 8 27.4	125 9 28.5	Rodney	3,718.3

Sandy Point	31 53 44.86	1,381.6	91 13 43.19	1,134.8	353 55 21.6	173 55 26.2	Clark
					23 22 .7	202 21 40.2	Lewis
Saint Joseph	31 54 4.73	145.7	91 14 20.91	549.4	301 41 4	121 41 23.9	Sandy Point
					0 32 9.9	180 32 9.3	Lewis
Gold Bottom	31 54 34.07	1,049.4	91 12 34.26	900.0	50 4 54	230 4 17.6	Sandy Point
					72 7 50	252 6 53.6	Saint Joseph
Gillespie	31 55 14.20	437.2	91 12 53	1,392.2	336 16 47.9	158 16 57.8	Gold Bottom
					47 11 29.8	227 10 43.3	Saint Joseph
Watson	31 55 42.60	1,312.0	91 11 58.96	1,548.6	23 43 12.1	203 42 53.4	Gold Bottom
					58 21 39.2	238 21 10.6	Gillespie
Bruinsburg	31 55 54.05	1,664.6	91 10 24.75	650.1	54 6 16.2	234 5 7.7	Gold Bottom
					81 53 56	261 53 6.2	Watson
Bondurant	31 56 33.20	1,022.5	91 11 3.84	100.9	319 35 15.4	139 35 36.1	Bruinsburg
					42 54 .3	222 53 31.1	Watson
Waveland	31 58 2.29	70.5	91 9 43.67	1,146.6	15 16 54.1	195 16 32.4	Bruinsburg
					37 30 13.5	217 29 31.1	Bondurant
Bayou Pierre	31 57 54.70	1,684.6	91 8 56.12	1,473.4	32 4 16.5	212 3 29.6	Bruinsburg
					100 36 43.9	280 36 18.7	Waveland
Hard Scrabble	31 58 50.95	1,569.1	91 9 2.30	60.5	354 38 48.2	174 38 51.5	Bayou Pierre
					35 55 55.3	215 55 33.4	Waveland
Saunders	31 58 40.26	1,239.8	91 8 23.30	611.6	31 33 22.1	211 33 4.7	Bayou Pierre
					107 50 2.6	287 49 41.9	Hard Scrabble
Knight	32 00 23.85	734.6	91 7 52.03	1,365.3	14 25 46	194 25 29.4	Saunders
					32 48 54.7	212 48 17.5	Hard Scrabble
Whitehall Chute	31 59 56.94	1,753.6	91 7 22.34	586.3	34 7 27.7	214 6 55.4	Saunders
					136 46 23.6	316 46 7.9	Knight
Disharoon	32 1 00.44	13.6	91 6 16.25	426.5	41 34 12.1	221 33 37.1	Whitehall Chute
					65 51 22.5	245 50 31.8	Knight
Hughes	32 00 30.27	932.3	91 5 57.88	1,519	65 9 10.6	245 8 25.8	Whitehall Chute
					152 34 50	332 34 40.3	Disharoon
Grand Gulf Island	32 1 34.56	1,064.4	91 4 59.75	1,567.8	37 37 3.6	217 36 32.8	Hughes
					62 22 37.3	242 21 56.8	Disharoon
Crandall	32 1 44.04	1,356.4	91 5 35	918.3	287 30 52.8	107 31 11.5	Grand Gulf Island
					38 52 32.9	218 52 11	Disharoon
Thrasher	32 2 34.17	1,052.4	91 5 18.64	488.9	344 53 31	164 53 41	Grand Gulf Island
					15 32 24.9	195 32 16.2	Crandall
Hard Times	32 2 38.27	1,178.7	91 7 14.25	373.8	272 22 39.3	92 23 40.3	Thrasher
					302 40 16.7	122 41 9.3	Crandall
Yucatan Bar	32 3 3.85	118.6	91 6 33	865.7	328 14 12.9	148 14 43.7	Crandall
					53 56 36.1	233 56 14.2	Hard Times
Wilson	32 3 46.77	1,440.4	91 7 35.78	938.4	308 45 7.2	128 45 40.5	Yucatan Bar
					345 00 52.6	165 1 4	Hard Times
Sycamore	32 4 39.46	1,215.3	91 6 26.06	683.3	3 32 15.7	183 32 12	Yucatan Bar
					48 24 54.1	228 24 17.1	Wilson

2,160.2	
2,081.2	
1,164.7	
3,091.5	
2,361.7	
2,944.4	
1,330.5	
3,148.6	
2,305.6	
1,667.5	
4,200.6	
2,499.8	
1,583.7	
2,127.4	
4,094.6	
3,458.6	
4,385	
1,270.4	
1,740.4	
1,551.1	
1,646.9	
1,075.7	
3,294.7	
3,404.6	
2,852.9	
1,137.7	
2,614.4	
2,754.8	
2,448.1	
1,046.9	
2,499.7	
2,266	
970.1	
1,724.8	
1,901.8	
1,602.7	
3,036	
3,094	
2,891.4	
1,338.6	
2,111.7	
2,184.2	
2,950.5	
2,444.8	

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Buck Ridge	32 5 34.79	1,071.5	91 6 45.06	1,181.5	343 42 7.5	163 42 17.6	Sycamore	1,775.7
					21 47 35.3	201 47 8.4	Wilson	3,583.2
Swamp	32 4 39.54	1,217.7	91 4 48.38	1,268.7	89 57 1.9	269 56 10	Sycamore	2,561.7
					119 5 27.2	299 4 25.2	Buck Ridge	3,501.1
Munce	32 6 7.52	231.6	91 3 44.83	1,175.4	31 35 45.6	211 35 11.9	Swamp	3,181.4
					57 19 45.2	237 18 19.6	Sycamore	5,023.3
Elder	32 5 10.25	315.7	91 3 21.17	555	67 32 10.2	247 31 23.9	Swamp	2,475.1
					160 37 37.4	340 37 24.8	Munce	1,869.9
Big Black	32 6 35.45	1,091.9	91 2 34.07	893.1	25 12 19.4	205 11 54.4	Elder	2,900.4
					65 7 31.3	245 6 53.7	Munce	2,044.9
Gander	32 7 34.12	1,050.9	91 3 36.38	953.5	317 52 58.1	137 53 31.2	Big Black	2,435.9
					4 44 43.3	184 44 38.8	Munce	2,676.5
Point Pleasant	32 7 53.77	1,656	91 4 42.77	1,120.8	289 10 13	109 10 48.3	Gander	1,842.4
					335 5 45.1	155 6 15.9	Munce	3,607.9
Old River	32 9 6.86	211.3	91 2 16.60	434.9	36 12 38.5	216 11 56.1	Gander	3,540.1
					59 34 7.6	239 32 49.8	Point Pleasant	4,443.5
Cannon	32 8 15.19	467.9	91 2 38.23	870.8	79 00 47.8	258 59 38.9	Point Pleasant	3,458.8
					195 18 51.9	15 19 00.8	Old River	1,650.2
Morgan	32 8 52.55	1,618.4	91 00 54.77	1,435	65 58 16.2	245 57 23.8	Cannon	2,825.4
					101 37 22.9	281 36 39.4	Old River	2,189.1
Wilkinson	32 10 21.81	671.7	91 1 20.27	530.9	346 20 19.3	166 20 32.9	Morgan	2,829.3
					32 35 47.4	212 35 17.4	Old River	2,739.9
Williams	32 10 28.87	889.2	91 00 30.25	792.4	12 13 24.9	192 13 11.9	Morgan	3,035.5
					80 35 9.2	260 34 42.6	Wilkinson	1,328.5
Kellogg	32 11 6.11	188.2	91 1 44.75	1,172.1	300 26 18.7	120 26 58.4	Williams	2,263.8
					334 49 38.1	154 49 51.1	Wilkinson	1,507.6
Guy	32 11 43.57	1,341.9	91 1 31.81	833	324 58 11.1	144 58 43.9	Williams	2,809.8
					16 22 1.1	196 21 54.2	Kellogg	1,202.6
Coons	32 11 38.08	1,172.9	91 2 12.91	338.2	261 4 32	81 4 53.9	Guy	1,089.7
					323 9 48.5	143 10 3.5	Kellogg	1,230.5
Hankinson	32 12 14.84	457.1	91 1 42.17	1,104.3	1 49 51.3	181 49 49.9	Kellogg	2,118.3
					35 25 24.9	215 25 8.5	Coons	1,389.5
Moore	32 12 31.37	966.2	91 3 07.41	194.1	282 50 28.9	102 51 14.3	Hankinson	2,289.0
					318 59 11.5	138 59 40.5	Coons	2,175.3
Walton, 2	32 13 14.99	461.7	91 1 09.70	253.9	24 39 10	204 38 52.7	Hankinson	2,038.7
					66 27 22.7	246 26 20.0	Moore	3,362.7

Diamond Island	32 13 45.91	1,413.9	91 1 25.52	668.1	336 29 3	156 29 11.4	Walton, 2	1,038.5
					49 17 40.1	229 16 45.8	Moore	3,520
Gantt	32 13 2.34	72.1	91 00 28.53	747.1	109 53 1.4	280 52 39.4	Walton, 2	1,146.4
					131 38 12.3	311 57 41.9	Diamond Island	2,007.1
Cut-off	32 13 38.48	1,185.2	90 59 9.43	246.9	61 45 8.4	241 44 26.2	Gantt	2,351.5
					93 41 11.9	273 39 59.3	Diamond Island	3,570.8
Simrall	32 13 00.14	4.3	90 58 36.07	94.4	91 19 41.1	271 18 41.1	Gantt	2,945.8
					143 30 47.8	323 30 30	Cut-off	1,468.9
Charley	32 13 42.30	1,302.7	90 58 28.56	747.7	8 36 43.6	188 36 39.6	Simrall	1,313.4
					83 43 46.4	263 43 24.6	Cut-off	1,076.6
Myer	32 13 44.93	1,383.7	90 57 10.77	281.9	58 18 17	238 17 31.5	Simrall	2,625.4
					87 43 42.1	267 43 00.6	Charley	2,038.5
South Bedford	32 14 39.35	1,211.9	90 57 38.20	999.8	336 48 23.1	156 48 37.7	Myer	1,823.7
					26 22 41.4	206 22 10.5	Simrall	3,411
Warrenton	32 14 54.78	1,687.1	90 56 35.30	924	23 21 1.9	303 20 43	Myer	2,343.4
					73 54 28.7	253 53 55.2	South Bedford	1,713.9
North Bedford	32 15 28.65	728.4	90 57 9.72	254.4	314 37 31	134 37 49.4	Warrenton	1,266
					28 39 26.6	208 39 11.4	South Bedford	1,555
Big Bayou	32 16 2.11	65	90 56 34.22	895.5	00 46 49.6	180 46 49	Warrenton	2,074.3
					38 6 29.2	218 6 10.3	North Bedford	1,505.6
Reade	32 16 48.24	1,485.7	90 57 41.30	1,080.5	308 59 6.3	128 59 42.1	Big Bayou	2,258.5
					342 24 1.6	162 24 18.5	North Bedford	2,733.6
Last	32 15 53.70	1,653.9	90 57 47.92	1,253.9	185 53 28.9	5 53 32.4	Reade	1,688.9
					262 20 45.5	82 21 24.8	Big Bayou	1,946.2
Biggs	32 17 54.94	1,692.1	90 57 27.43	717.6	338 9 45	158 10 13.4	Big Bayou	3,743.9
					8 10 19.9	188 10 9	Last	3,772.2
Kemp	32 17 25.10	773.1	90 56 1.84	48.1	44 36 20.5	224 35 23.9	Last	3,953.8
					112 19 8.4	292 18 22.7	Biggs	2,420.7
Base, southwest end (delta)	32 19 4.60	141.7	90 56 13.19	345	354 27 51.6	174 27 57.7	Kemp	3,079.3
					42 9 7.7	222 8 28.1	Biggs	2,894.3
Walnut	32 18 .22	6.8	90 54 32.91	360	65 4 20.5	245 3 33	Kemp	2,566
					127 5 41.8	307 4 48.2	Southwest Base	3,288.7
Base, northeast end (delta)	32 20 1.61	49.8	90 54 53.95	1,410.7	351 37 33.9	171 37 45.1	Walnut	3,779.6
					49 43 51.6	229 43 9.2	Southwest Base	2,716.8
Fort	32 20 26.16	805.8	90 53 5.04	131.9	75 8 24	255 7 25.8	Northeast Base	2,946.7
					27 5 4	207 4 17	Walnut	5,048.9
Island	32 21 7.11	219.2	90 53 41.73	1,691	322 44 38.4	142 44 58	Fort	1,584.8
					43 6 45.9	223 6 7.3	Northeast Base	2,763.5
Harris	32 20 .69	2.7	90 56 52.59	1,375.3	315 17 23.3	135 18 38	Walnut	5,194.6
					209 7 25.4	89 8 28.9	Northeast Base	3,103.3
King	32 20 35.58	1,095.7	90 56 37.18	972.2	272 58 35.8	93 0 29.3	Fort	5,555.1
					325 48 14.6	145 49 21.1	Walnut	5,785
New King	32 20 38.82	1,196.7	90 56 46.03	1,203.7	8 11 9.4	188 11 5.9	Harris	1,205.2
					291 20 38.1	111 21 38.1	Northeast Base	3,147.2

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Crane	32 20 36.30	1,118	90 57 57.10	1,492.9	267 36 7.6	87 36 45.6	New King	1,859.9
					303 27 56.4	123 28 30.9	Harris	2,022.2
Hutchinson	32 21 9.42	290.2	90 57 40.78	1,066.4	22 41 17	202 41 8.3	Crane	1,105.9
					303 21 32.6	123 22 1.9	New King	1,714.2
Williams	32 19 52.64	1,621.3	90 58 9.23	241.3	193 16 15.2	13 16 21.7	Crane	1,381.7
					263 27 37	83 28 18	Harris	2,017.3
Mattingly	32 20 44.06	1,357.2	90 59 5.67	148.2	250 36 24.5	70 37 9.9	Hutchinson	2,353
					317 0 59.5	137 1 29.7	Williams	2,165.2
Yazoo	32 22 7.31	225.1	90 59 10.54	275.6	357 9 20.6	177 9 23.2	Mattingly	2,567.3
					307 13 15.7	127 14 3.7	Hutchinson	2,947.2
Nichols	32 21 48.94	1,507.4	91 00 9.37	245.1	249 48 .5	69 48 32	Yazoo	1,638.8
					320 10 59.5	240 11 33.6	Mattingly	2,601.5
Utz	32 23 3.09	95.1	91 00 58.41	1,526.7	330 41 38.5	150 42 4.8	Nichols	2,619.1
					301 20 54.9	121 21 52.7	Yazoo	3,302
Pugh	32 25 5.92	182.3	91 00 22.92	598.8	13 46 34.7	193 46 17.7	Utz	3,895.4
					341 1 12.1	161 1 50.9	Yazoo	5,817.8
Levee	32 25 25.23	777.2	91 1 15.48	404.4	293 25 17.5	113 25 45.7	Pugh	1,496.5
					354 10 58	174 11 7.1	Utz	4,401
Mayer	32 25 24.56	756.4	91 2 11.02	287.9	281 29 5.8	101 30 3.7	Pugh	2,882.2
					336 27 51.7	156 28 30.6	Utz	4,752.9
McBurney	32 27 42.24	1,301.3	91 2 11.12	290.6	359 57 48.8	179 57 48.9	Mayer	4,241.1
					329 34 46.9	149 35 44.9	Pugh	5,583.6
Byrne	32 27 9.22	284	91 4 25.47	665	253 49 17.2	73 50 29.3	McBurney	3,653.1
					312 32 21.7	132 33 33.8	Mayer	4,767.4
Lake	32 25 58.43	1,799.7	91 2 1.88	49.1	120 11 4.6	300 9 47.6	Byrne	4,338.5
					12 53 43.4	192 53 38.5	Mayer	1,070.1
Purvis	32 27 57.47	1,770.2	91 3 22.04	575.7	48 6 9 2	228 5 35.2	Byrne	2,225.4
					284 12 16.6	104 12 54.7	McBurney	1,910.6
Sand Island	32 28 39.08	1,203.8	91 4 59.09	1,542.6	296 49 18.6	116 50 10.7	Purvis	2,819.8
					342 23 52.2	162 24 10.3	Byrne	2,003.9
Morancy	32 27 56.91	1,752.9	91 6 8.45	220.7	234 10 45.7	54 21 22.9	Sand Island	2,228.9
					298 37 58.5	118 38 53.8	Byrne	3,004.6
Dillon	32 28 53.47	1,646.9	91 7 1.71	44.6	321 24 3.3	141 24 31.9	Morancy	2,229.3
					277 52 26.2	97 53 32.1	Sand Island	3,232.2
Eagle	32 29 56.43	1,738.1	91 6 29.44	768.5	23 28 45.4	203 28 28.1	Dillon	2,114.3
					315 10 39.7	135 17 28.2	Sand Island	3,352.9

Creswell	32 20 53.90	1,660.3	91 7 32.67	852.7	267 17 40.8	87 18 14.8	Eagle
					336 31 23.6	156 31 40.2	Dillon
Delta court-house, flag-staff at east end	32 19 6.08	187.3	90 56 13.41	350.7	307 38 53.7	127 39 47.4	Walnut
					354 26 23.8	174 26 30	Kemp
House near Walnut, chimney	32 18 1.69	52.1	90 54 32.39	847.4	64 17 37	244 16 49	Kemp
					207 10 8	27 10 55	Fort
Engine-house cupola, Delta	32 19 34.43	1,060.5	90 55.30.53	798.5	228 48 46	48 49 06	Northeast base
					332 32 44	152 33 15	Walnut
Vicksburg, Catholic church spire	32 20 54.63	1,682.8	90 52 54.68	1,429.6	25 33 48	205 32 56	Walnut
					74 54 27	254 52 20	Harris
Court-house cupola, Vicksburg	32 21 5.41	166.8	90 52 45.16	1,180.8	23 16 6	203 15 55	Fort
					92 2 7	272 1 37	Island
Trinity Church spire, Vicksburg	32 20 49.18	1,514.9	90 52 49.49	1,294	27 27 59	207 27 4	Walnut
					76 38 12	256 36 2	Harris
Methodist church spire, Vicksburg	32 20 52.15	1,606.4	90 52 46.41	1,293.5	27 44 58	207 44 1	Walnut
					76 1 49	255 59 37	Harris
McGee	32 28 3.23	99.6	90 52 57.11	1,492.7	18 3 55	198 3 31	Island
					355 4 44	175 4 50	Vicksburg court-house
National cemetery flag-staff	32 22 25.38	781.8	90 52 6.45	168.7	45 56 34	225 55 43	Island
					131 21 42	311 21 15	McGee
Mrs. King's house, chimney	32 20 37.15	1,144.4	90 56 36.86	963.0	292 7 31	112 8 26	Northeast base
					19 49 2	199 48 54	Harris
New house, south gable	32 21 12.24	377.1	90 57 38.86	1,016.1	23 17 7	203 16 57	Crane
					331 25 49	151 26 14	Harris
Waddell's house, southeast chimney	32 21 1.60	49.4	90 59 19.49	509.6	186 35 32	6 35 37	Yazoo
					326 13 46	146 13 53	Mattingly
Broozowski's (Dr.) house, chimney	32 23 41.46	1,277.1	91 00 55.48	1,449.9	340 49 20	160 49 45	Nichols
					3 42 19	183 43 17	Utz
Mayer's gin-house, chimney	32 24 46.82	1,442.3	91 1 .35	9.1	238 58 43	58 59 3	Pugh
					359 5 23	179 5 24	Utz
Graves's house, center	32 27 24.31	748.9	91 4 34.68	905.6	164 32 21	344 32 8	Sand Island
					241 41 58	61 42 37	Purvis
Milliken's Bend, church spire	32 27 30.88	951.2	91 6 7.63	199.4	220 25 52	40 26 29	Sand Island
					259 15 52	79 17 21	Purvis
Morency's house, northeast chimney	32 28 14.48	446	91 6 25.70	671.1	251 28 25	71 29 12	Sand Island
					141 57 23	321 57 4	Dillon
Omega	32 31 2.06	63.4	91 7 28.69	748.7	2 45 55.9	182 45 53.8	Creswell
					322 34 7.5	142 34 39.4	Eagle
Willows (Mississippi)	32 32 10.40	320.3	91 5 11.60	302.6	26 11 7.8	206 10 26	Eagle
					59 32 16.1	239 31 2.4	Omega
Terrapin	32 32 58.21	1,798	91 6 1.35	35.3	318 36 7.1	138 36 33.9	Willows
					32 30 25.3	212 29 38.3	Omega
Gynn (Mississippi)	32 34 11.08	341.3	91 4 34.11	889.7	14 44 48.1	194 44 28	Willows
					45 24 10.3	225 23 23.3	Terrapin

Eagle	1,652.4
Dillon	2,029.4
Walnut	3,320.9
Kemp	3,125.3
Kemp	2,597.6
Fort	5,002.2
Northeast base	1,271.6
Walnut	3,270.2
Walnut	5,954.7
Harris	6,444.2
Fort	1,316.1
Island	1,480.1
Walnut	5,865.3
Harris	6,534.6
Walnut	5,983.9
Harris	6,634.7
Island	3,762.1
Vicksburg court-house	3,642.6
Island	3,466.6
McGee	1,764.3
Northeast base	2,905.5
Harris	1,213.5
Crane	1,205.6
Harris	2,530.8
Yazoo	2,037.3
Mattingly	650
Nichols	3,669.4
Utz	1,184.4
Pugh	1,141.3
Utz	3,195.7
Sand Island	2,389.5
Purvis	2,154.7
Sand Island	2,759.8
Purvis	4,401.3
Sand Island	2,385.4
Dillon	1,525.1
Creswell	2,104
Eagle	2,548
Eagle	4,600.5
Omega	4,151.1
Willows	1,963
Omega	4,242.1
Willows	3,843.8
Terrapin	3,196.6

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Villa Vista	32 34 13.50	415.8	91 5 22.02	574.3	273 24 58.2	93 25 24	Gynn	1,252
					23 51 55.9	203 51 34.7	Terrapin	2,536.1
Henderson	32 35 .07	2.2	91 4 12.74	332.3	20 16 31.9	200 16 20.4	Gynn	1,608.7
					51 33 57	231 33 19.7	Villa Vista	2,307.2
Brunswick (Mississippi)	32 34 31.83	980.4	91 3 51.56	1,344.7	60 3 33.8	240 3 10.9	Gynn	1,280.7
					147 35 8.1	327 34 56.7	Henderson	1,030.3
Foster	32 36 1.69	52.1	91 3 14	365	19 29 37.9	199 29 17.7	Brunswick	2,936.1
					38 54 31.2	218 53 59.6	Henderson	2,439.2
Cabin Home (Mississippi)	32 35 24.87	766	91 2 13.60	354.5	57 24 44.1	237 23 51.3	Brunswick	3,032.5
					125 45 56.3	305 45 23.8	Foster	1,940.9
Albemarle (Mississippi)	32 37 14.10	434.2	91 2 .70	18.2	5 42 38.5	185 42 31.5	Cabin Home	3,381.4
					40 35 48	220 35 8.5	Foster	2,937.1
Newman	32 37 1.53	47.1	91 3 44.87	1,169.7	261 52 58.6	81 53 54.8	Albemarle	2,743.3
					336 24 18.7	156 24 35.3	Foster	2,011.5
Burleigh (Mississippi)	32 37 53.84	1,658.4	91 4 5.56	144.9	290 36 8.9	110 37 16.3	Albemarle	3,477.5
					341 29 41.3	161 29 52.5	Newman	1,699
Raleigh	32 36 56.27	1,733.2	91 5 58.39	1,522.1	238 54 22.7	58 55 23.5	Burleigh	3,434.8
					267 19 15.4	87 20 27.4	Newman	3,484.9
Tennessee (Mississippi)	32 37 50.08	1,542.6	91 6 11	286.7	267 57 38.3	87 58 46	Burleigh	3,272.1
					348 46 56.8	168 47 3.6	Raleigh	1,689.8
Edgewood	32 37 8.71	268.3	91 7 57.08	1,488	245 15 11.8	65 16 9	Tennessee	3,044.9
					277 3 9.8	97 4 13.8	Raleigh	3,118
No Place (Mississippi)	32 37 50.46	1,554.3	91 7 59.15	1,541.6	270 13 48.2	90 14 46.5	Tennessee	2,819.2
					357 35 49.7	177 35 50.8	Edgewood	1,287.1
Airlie	32 37 55.65	1,714.1	91 9 30.26	788.8	273 50 53.9	93 51 43	No Place	2,380.2
					300 45 30.8	120 46 21	Edgewood	2,826.8
Shoot (Mississippi)	32 38 15.41	474.6	91 8 37.55	978.7	307 31 37.8	127 31 58.5	No Place	1,261.9
					66 6 35.3	246 6 6.9	Airlie	1,502.8
Wilton	32 39 24.57	756.8	91 10 23.39	609.6	307 40 14.4	127 41 11.5	Shoot	3,485.6
					333 10 33.5	153 11 2.2	Airlie	3,069.4
Arcadia (Mississippi)	32 39 56.17	1,730.1	91 8 25.81	672.5	5 37 48.6	185 37 42.3	Shoot	3,118.9
					72 23 6.4	252 22 2.9	Wilton	3,215
Stamboul	32 40 31.33	965	91 9 54.43	1,417.9	295 7 11.3	115 7 59.2	Arcadia	2,550.5
					20 9 21.9	200 9 6.3	Wilton	2,190.5
.....	32 41 38.96	1,200.1	91 8 17.27	449.8	4 1 3.4	184 00 58.8	Arcadia	3,174.2
					50 32 55.9	230 32 3.4	Stamboul	3,278.3

Shiloh (Mississippi)	32 41 49.58	1,527.2	91 5 31.27	814.3	52 28 47.2	232 27 12.9	Arcadia	5,734.1
					85 41 16.3	265 39 46.6	Homestead	4,336.5
Concord	32 42 17.66	543.9	91 6 1.28	33.3	317 53 46.3	137 54 2.5	Shiloh	1,165.8
					71 24 42.3	251 23 28.9	Homestead	3,737.5
Bass	32 42 53.97	1,662.4	91 4 54.08	1,408.2	26 1 46.1	206 1 26	Shiloh	2,207.2
					57 25 24.6	237 24 48.3	Concord	2,076.9
Hays (Mississippi)	32 42 42.11	1,297.1	91 4 19.86	517.1	48 58 43.6	228 58 4.9	Shiloh	2,465.3
					112 17 4.2	292 16 45.7	Bass	963.1
Point Lookout	32 43 36	1,108.9	91 4 41.33	1,076.1	341 23 3	161 23 14.6	Hays	1,751.5
					14 23 7.7	194 23 .8	Bass	1,336.6
South 95 (Mississippi)	32 43 42.89	1,321.1	91 4 10.32	268.6	7 33 45.9	187 33 40.7	Hays	1,888.6
					75 16 32.2	255 16 15.4	Point Lookout	835
North 95 (Mississippi)	32 44 41.02	1,263.5	91 4 48.80	1,270.3	330 46 26	150 46 46.8	South 95	2,052
					354 27 26.4	174 27 30.4	Point Lookout	2,012.5
Deer	32 44 29.05	894.7	91 5 23.12	601.9	247 23 34.2	67 33 52.8	North 95	966.6
					326 20 36.9	146 20 59.5	Point Lookout	1,963.1
Farland (Mississippi)	32 45 .11	3.4	91 5 35.47	923.2	295 49 24.8	115 49 50	North 95	1,349.8
					341 25 30.2	161 25 36.9	Deer	1,009.6
Diamond	32 44 21.86	673.3	91 6 14.23	370.4	220 34 25.2	40 34 46.2	Farland	1,551.6
					260 32 54.6	80 33 22.3	Deer	1,349.2
Shipland (Mississippi)	32 44 52.53	1,618	91 7 14.16	368.6	264 47 44	84 48 37.4	Farland	2,579.9
					301 11 30.2	121 12 2.6	Diamond	1.824
Exern	32 43 53.73	1,655	91 8 27.68	720.6	226 34 32.5	46 35 12.3	Shipland	2,635.1
					255 59 17.6	76 00 29.8	Diamond	3,580.9
Ingersoll (Mississippi)	32 45 57.86	1,782.2	91 8 55.75	1,450.8	307 16 8	127 17 3	Shipland	3,323.2
					349 10 44.3	169 10 59.5	Exern	3,893.1
Wyly	32 45 24.16	744.1	91 10 5.91	153.8	240 22 41.3	60 23 19.3	Ingersoll	2,100.8
					317 26 18.2	137 27 11.4	Exern	3,781.6
Short	32 46 29.19	899.1	91 10 6.62	172.3	297 36 27.3	117 37 5.7	Ingersoll	2,081.8
					359 28 13.3	179 28 13.7	Wyly	2,003.2
Winslow	32 47 8.44	259.9	91 9 6.65	173	352 33 38.1	172 33 44	Ingersoll	2,192.4
					52 14 17.1	232 13 44.6	Short	1,974.2
Base, south end Lake Providence	32 47 12.12	373.3	91 10 21.35	555.5	273 20 17.7	93 20 58.2	Winslow	1,947
					343 50 26.9	163 50 34.9	Short	1,377
Base, north end Lake Providence	32 48 2.49	76.7	91 10 26.85	698.5	308 34 48.2	128 35 31.7	Winslow	2,669.7
					354 43 23.6	174 43 26.6	South base	1,558.12
Sand bar	32 35 3.73	114.9	91 3 14.56	379.6	85 45 16	265 44 45	Henderson	1,521.7
					180 27 56	00 27 56	Foster	1,785.4
Church spire	32 37 5.13	158	91 4 26.90	701.2	200 20 45	20 20 57	Burleigh	1,600.1
					275 46 33	95 46 56	Newman	1,101.3
Foster's chimney	32 36 57.97	1,785.6	91 5 8.19	213.5	223 29 28	43 30 2	Burleigh	2,372.3
					267 6 6	87 6 51	Newman	2,175
Foster's gin, cupola	32 36 49.75	1,532.4	91 5 5.21	135.8	98 14 46	278 14 17	Raleigh	1,400.9
					218 13 35	38 14 7	Burleigh	2,513.3

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Goodrich, Odd Fellows' Hall, north gable	32 37 41.51	1,278.6	91 00 14.05	366.1	222 19 58	42 20 18	Shoot	1,412.8
					296 43 20	116 44 2	Edgewood	2,246.5
Illawana post-office, chimney	32 38 24.19	745.1	91 9 2.19	57.1	276 58 55	96 59 40	Shoot	2,222.5
					316 34 11	136 34 28	Airlie	1,210.5
Melbourne, chimney	32 38 39.97	1,231.2	91 10 14.72	383.6	286 37 21	106 38 13	.....	2,643.4
					319 40 04	139 40 28	Airlie	1,790.8
Wyly's house, east gable	32 45.23.44	722	91 10 26.13	680.3	245 43 58	65 44 47	Ingersoll	2,580.5
					311 51 20	131 52 24	Exern	4,140.9
Montgomery's house, cupola	32 45 55.01	1,694.4	91 10 9.12	237.3	267 21 55	87 22 35	Ingersoll	1,911.6
					324 44 24	144 45 19	Exern	4,575.2
Henderson gin, chimney	32 34 27.98	860.2	91 5 5.12	133.5	302 40 57	122 41 14	Gynn	961.1
					27 57 46	207 57 16	Terrapin	3,128.7
Cotton-gin, south gable	32 37 56.98	1,753.5	91 2 59.22	1,543.5	6 11 50	186 11 42	Foster	3,570.7
					34 54 06	214 53 41	Newman	2,080.5
Myer's store, south chimney	32 37 48.80	1,503.1	91 3 .16	4.2	38 40 55	218 40 31	.....do	1,865.1
					95 12 19	275 11 44	Burleigh	1,711.7
Tennessee gin, chimney	32 38 12.62	388.7	91 6 9.67	253	300 6 38	120 07 56	Newman	4,363.8
					352 52 35	172 52 41	Raleigh	2,370.5
Powell's house, southwest chimney	32 42 58.34	1,797	91 3 59.76	1,556.1	46 18 58	226 18 47	Hays	723.7
					84 33 52	264 33 23	Bass	1,420.9
Hall's store, west gable	32 43 10.68	328.9	91 3 49.89	1,299	72 53 30	252 52 55	.....do	1,749.2
					120 13 00	300 12 32	Point Lookout	1,550.1
Sartoris	32 48 1.67	51.4	91 8 55.08	1,432.9	55 47 40.7	235 46 54	South base	2,714.3
					90 36 55.8	270 36 06.1	North base	2,387.9
Arlington	32 48 25.27	778.4	91 9 44.64	1.161.3	299 25 .9	119 25 27.7	Sartoris	1,480.3
					22 58 24.5	202 58 4.6	South base	2,447.3
Stack Island	32 49 33.32	1,026.3	91 7 50	1,300.4	30 57 9.5	210 56 34.2	Sartoris	3,292
					54 54 14.5	234 53 12.4	Arlington	3,645.1
Elton	32 50 1.32	40.7	91 8 42.65	1,109.1	302 12 8.8	122 12 37.3	Stack Island	1,618.2
					28 35 48	208 35 14.4	Arlington	3,309.5
Longwood	32 51 30.85	950.2	91 7 10.50	273	15 50 36.7	195 50 15.3	Stack Island	3,763.5
					40 59 25.9	220 58 35.9	Elton	3,653.6
Duncan	32 51 9.11	280.6	91 6 19.57	508.8	38 33 42.3	218 32 53.3	Stack Island	3,773.4
					116 49 54.9	296 49 27.3	Longwood	1,484
Vista	32 52 37.63	1,159.1	91 6 15.04	390.9	2 28 34.8	182 28 32.3	Duncan	2,729.3
					35 2 6	235 1 35.9	Longwood	2,512.1

Homochitto	32 52 12.27	377.9	91 5 26.26	692.5	35 28 20.2	215 27 51.3	Duncan	2,389.1
					121 37 45.6	301 37 19.1	Vista	1,489.4
Cottonwood	32 54 6.62	203.9	91 5 10.95	284.6	6 26 40.3	186 26 32	Homochitto	3,544.9
					31 17 16.1	211 16 41.3	Vista	3,207.9
Mayersville	32 54 20.22	622.8	91 4 8.53	221.7	27 8 40.4	207 7 58.2	Homochitto	4,428
					75 31 41.4	255 31 7.5	Cottonwood	1,675.3
Wilson's Point	32 56 3.14	96.7	91 5 20.33	528.1	329 31 21.7	149 32 .7	Mayersville	3,678.6
					356 6 58.6	176 7 3.7	Cottonwood	3,597.5
Green	32 56 7.07	217.8	91 4 38.54	1,091.1	346 40 21.6	166 40 37.9	Mayersville	3,382.6
					83 38 20.1	263 37 57.4	Wilson's Point	1,092.4
Duncansby	32 57 47	1,447.7	91 5 35.65	925.7	334 15 53.8	154 16 24.9	Green	3,417.3
					352 54 21	172 54 29.3	Wilson's Point	3,224.2
Possum Point	32 57 10.85	334.2	91 6 40.40	1,049.2	236 28 50.8	56 29 26	Duncansby	2,016.8
					301 49 13.1	121 50 19.4	Green	3,725.7
Williams	32 58 12.73	392.1	91 6 39.77	1,032.6	295 27 18.1	115 27 53	Duncansby	1,844.2
					00 29 17.8	180 29 17.5	Possum Point	1,906.4
Scott	32 57 41.44	1,276.5	91 8 .48	12.5	245 17 26.7	65 18 10.6	Williams	2,307.1
					294 21 48.4	114 22 32	Possum Point	2,283.4
Cordell	32 58 28.43	875.6	91 7 55. 5	1,429.3	283 53 13.2	103 53 54.2	Williams	2,023.8
					5 33 32.3	185 33 29.3	Scott	1,454.5
Hardin	32 57 50.40	1,552.4	91 8 47.84	1,242.2	229 28 48.6	49 29 17.3	Cordell	1,803.3
					282 39 4.5	102 39 30.3	Scott	1,260.7
Lewis	32 58 27.35	842.4	91 9 13.76	357.4	269 03 34.6	89 4 17.4	Cordell	2,044
					329 24 16.6	149 24 30.7	Hardin	1,322.2
Pilcher's Point	32 57 43.94	1,353.5	91 11 25.28	656.4	248 36 34.9	68 37 40.5	Lewis	3,667.8
					267 12 7.8	87 13 33.5	Hardin	4,093.4
Sarah's Island	32 58 19.39	597.2	91 11 20.24	525.5	265 43 16.8	85 44 25.6	Lewis	3,293.5
					6 50 1.1	186 49 58.4	Pilcher's Point	1,099.8
Goza	32 57 58.55	1,803.5	91 12 51.92	1,348.2	254 54 18	74 55 7.9	Sarah's Island	2,465.8
					281 18 19.6	101 19 6.7	Pilcher's Point	2,294.7
Poverty Point	32 59 15.82	487.3	91 12 28.57	741.7	314 24 37	134 25 14.2	Sarah's Island	2,484
					14 17 26.8	194 17 14.1	Goza	2,456.3
Friedlander	32 58 54.92	1,691.6	91 13 25.38	658.9	246 24 34.9	66 25 5.8	Poverty Point	1,609.5
					333 24 37.6	153 24 55.8	Goza	1,941.6
Ashton	32 59 40.32	1,242.	91 13 .20	5.2	312 34 42.6	132 34 59.8	Poverty Point	1,115.1
					25 3 41.9	205 3 28.2	Friedlander	1,543.9
Stevenson	33 00 9.42	290.1	91 11 5.68	147.4	52 30 24.2	232 29 39.1	Poverty Point	2,712.3
					73 13 29.3	253 12 26.9	Ashton	3,105
Richardson	32 59 37.09	1,142.5	91 10 44.61	1,158	76 21 42.1	256 20 45.5	Poverty Point	2,777.4
					151 13 18.9	331 13 7.4	Stevenson	1,136.2
Graves	33 00 58.81	1,811.5	91 9 53.22	1,381.4	27 55 26	207 54 58	Richardson	2,849
					51 2 6	231 1 26.5	Stevenson	2,419.3
Carolina	33 00 37.13	1,143.7	91 9 12.36	320.8	52 19 34.9	232 18 44.7	Richardson	3,025.9
					122 11 56.2	302 11 33.9	Graves	1,253.3

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Kershaw	33 2 1.44	44.4	91 8 50	1,207.3	12 35 57.2	192 35 45	Carolina	2,661.2
					40 28 6.2	220 22 31.7	Graves	2,532.7
Sterling	33 2 2.89	89	91 9 36.32	941.4	272 7 58.9	92 8 24.2	Kershaw	1,202.8
					12 31 49	192 31 39.8	Graves	2,022.3
Bar	33 3 2.17	66.8	91 8 32.72	848.8	18 28 38.7	198 28 29.3	Kershaw	1,923.8
					42 6 36.8	222 6 2.1	Sterling	2,461.2
Raynor	33 3 59.84	1,843.3	91 9 34.36	891.2	318 00 12.8	138 00 46.4	Bar	2,390.4
					0 48 22.8	180 48 21.7	Sterling	3,602.9
Leota	33 4 27.98	861.9	91 8 54.46	1,412.4	347 57 19.1	167 57 31	Bar	2,703
					50 3 15.9	230 2 54.1	Raynor	1,350.2
Hilliard	33 4 54.70	1,685	91 10 5.42	140.5	294 5 79.3	114 5 58	Leota	2,016.1
					334 30 47.9	154 31 4.8	Raynor	1,872.1
Worthington	33 6 24.70	760.9	91 10 3.48	90.3	333 31 44.4	153 32 22.1	Leota	4,016.5
					1 2 18.5	181 2 12.4	Hilliard	2,773
Barnard	33 5 54.40	1,675.7	91 10 35.21	912.9	221 23 27.5	41 23 44.8	Worthington	1,244
					337 12 59.4	157 13 15.7	Hilliard	1,995
Moore	33 7 32.10	988.8	91 11 51.6	1,323.5	306 39 42	126 40 40.8	Worthington	3,477
					326 50 1	146 50 41.5	Barnard	3,595.2
Wickliffe	33 7 44.33	1,365.5	91 10 33.42	866.2	342 26 32.2	162 26 48.6	Worthington	2,573.2
					79 23 56.9	259 23 14.5	Moore	2,047.4
Haley	33 8 25.73	792.6	91 11 8.73	226.2	324 19 50.7	144 20 10	Wickliffe	1,569.7
					33 35 15.2	213 34 52.1	Moore	1,983.2
Cottage	33 8 6.06	186.7	91 9 26.41	684.5	68 56 6	248 55 24	Wickliffe	1,861.6
					102 52 41.1	282 51 45.2	Haley	2,720.6
Brooks	33 9 9	277.2	91 9 28.35	734.6	358 30 42.4	178 30 43.5	Cottage	1,939.5
					62 52 50.8	242 51 55.9	Haley	2,923.1
Ford	33 8 49.85	1,535.6	91 7 53.74	1,392.5	60 40 58.2	240 40 7.5	Cottage	2,754.7
					108 31 50.6	288 30 58.9	Brooks	2,521.8
Hill	33 8 11.60	357.3	91 7 52.24	1,368.8	86 00 20.3	265 50 28.8	Cottage	2,446.9
					178 6 7.6	358 6 6.8	Ford	1,179
Chaff	33 8 43.77	1,348.2	91 6 2.10	54.4	70 51 52.8	250 50 52.6	Hill	3,021.6
					93 42 57.8	273 41 56.8	Ford	2,899.4
Harwood	33 9 18.91	582.5	91 6 37.96	983.7	319 21 36.3	139 21 55.9	Chaff	1,426.8
Hawkins					65 30 3.5	245 29 22.1	Ford	2,158.4
	33 9 48.23	1,486.6	91 6 5.91	158.1	357 9 30.1	177 9 32.2	Chaff	1,988.4
					42 36 15.2	222 35 57.7	Harwood	1,227

Levee	33 9 26.63	820.3	91 5 11.49	297.7	44 48 58.4	224 48 30.7	Chaff	1,861.1
					115 16 18.3	295 15 48.5	Hawkins	1,559.3
Quarters	33 10 33.09	1,019.3	91 4 35.12	909.8	94 42 43.7	294 42 23.8	Levee	2,254
					59 34 10.8	239 33 21.1	Hawkins	2,728.1
Drift	33 10 27.90	859.4	91 5 26.45	685.2	263 8 27.1	83 8 55.2	Quarters	1,339.4
					348 23 26.7	168 23 34.9	Levee	1,927.2
Raft	33 11 42.42	1,306.7	91 5 34.81	901.5	324 5 41	144 6 13.7	Quarters	2,636.8
					354 36 49	174 36 53.6	Drift	2,305.9
Glenora	33 11 53.28	1,641.2	91 4 44.11	1,142.3	354 37 4.6	174 37 9.5	Quarters	2,481.3
					75 42 43.6	255 42 15.8	Raft	1,355.2
Adams	33 12 35.70	1,099.7	91 6 3.33	86.2	302 28 51.7	122 29 35.1	Glenora	2,432.6
					335 45 39.9	155 45 55.5	Raft	1,799.8
Sedge	33 13 8.10	252.2	91 5 42.62	1,103.3	326 42 13.8	146 42 45.9	Glenora	2,760.8
					28 11 7.2	208 10 55.9	Adams	1,135.8
Junction	33 13 20.01	616.4	91 7 .70	18.1	280.12 2.4	100 12 45.2	Sedge	2,054.5
					312.34 30.1	132 35 1.5	Adams	2,017.7
Walnut Point	33 14 8.83	272	91 6 50.71	1,312.8	316 38 58.8	136 39 36.1	Sedge	2,568.7
					9 45 43.2	189 45 37.7	Junction	1,526
Lakeport	33 13 37.43	1,152.9	91 7 31.09	804.9	227 13 15.4	47 13 37.5	Walnut Point	1,424.3
					304 17 47	124 18 3.6	Junction	952.4
Goose Bar	33 15 21.19	652.8	91 7 40.25	1,041.7	330 5 8.3	150 5 35.5	Walnut Point	2,571.7
					355 45 23.5	175 45 28.5	Lakeport	3,205.3
Compton	33 16 .59	18.2	91 6 51.26	1,326.5	359 45 47.3	179 45 47.6	Walnut Point	3,443
					46 15 13.5	226 14 46.6	Goose Bar	1,755.3
Starling	33 16 46.24	1,424.3	91 8 29.68	768	296 54 .8	116 54 54.8	Compton	2,909.6
					333 58 16.7	153 58 43.8	Goose Bar	2,916
Refuge	33 17 31.03	955.8	91 8 6.68	172.8	324 59 4.8	144 59 46.2	Compton	3,401.7
					23 20 29.5	203 20 16.9	Starling	1,502.6
Sunnyside	33 17 31.73	977.4	91 9 22.35	578.3	270 37 34.8	90 38 16.3	Refuge	1,958
					315 47 41.4	135 48 10.3	Starling	1,954.6
Island 84	33 18 59.03	1,818.3	91 9 25.70	664.7	322 58 25.8	142 59 9.2	Refuge	3,395.4
					358 9 5.4	178 9 7.2	Sunnyside	2,690.8
Davis	33 18 55.89	1,721.6	91 11 .65	16.8	267 44 33.1	87 45 25.3	Island 84	2,458
					315 32 47.7	135 33 41.7	Sunnyside	3,631.9
Warfield	33 20 16.41	505.5	91 9 33.52	866.6	355 8 .2	175 9 4.5	Island 84	2,392.6
					42 15 38.1	222 14 50.2	Davis	3,351.4
Vaucluse	33 20 27.64	851.4	91 10 32.78	847.5	282 43 16.1	102 43 48.7	Warfield	1,571
					14 18 34.5	194 18 19.2	Davis	2,917.1
Leland	33 21 41.85	1,289.1	91 9 9.44	244	13 18 34.9	193 18 21.7	Warfield	2,704.8
					43 18 43.8	273 17 58	Vaucluse	3,141.6
Highland	33 21 14.06	433	91 8 23.76	614.3	45 27 10.8	225 26 32.5	Warfield	2,531.4
					125 56 41.1	305 56 16	Leland	1,458.8
Halliday	33 22 26.22	807.7	91 7 48.58	1,255.5	22 15 19.6	202 15 .2	Highland	2,402
					56 49 42	236 48 57.5	Leland	2,497.7

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Richardson	33 21 46.29	1,425.9	91 6 30.37	785	71 17 46.9	251 16 44.5	Highland	3,095.3
					121 19 26.4	301 18 43.4	Halliday	2,366.6
Whittaker	33 22 57.68	1,776.7	91 6 47.74	1,233.7	348 27 40.6	168.27 50.2	Richardson	2,244.7
					58 21 27.2	238 20 53.7	Halliday	1,847.3
Jack	33 22 22.04	678.9	91 5 54.04	1,396.7	40 27 27.3	220 27 7.3	Richardson	1,447.3
					128 21 12.2	308 20 42.7	Whittaker	1,769.8
Bachelors' Bend Towhead	33 23 35.23	1,085.2	91 5 34.93	902.5	12 21 25.6	192 21 15.1	Jack	2,308.4
					58 25 16.2	238 24 36.1	Whittaker	2,208.9
Base, south end (Greenville)	33 23 18.19	560.4	91 4 32.44	838.4	50 38 50.1	230 38 5.2	Jack	2,728
					108 00 37.5	288 00 3.1	B. B. Towhead	1,698.3
Base, north end (Greenville)	33 24 19.23	592.4	91 3 58.77	1,518.4	61 23 53.6	241 23 .6	B. B. Towhead	2,830.7
					24 50 9.6	204 49 51.1	South Base	2,072
Telegraph	33 9 51.84	1,596.9	91 4 32.80	849.7	87 21 50	267 20 59	Hawkins	2,415.1
					177 17 13	357 17 12	Quarters	1,272.1
Point Chicot	33 24 44.14	1,359.6	91 5 24.84	641.7	289 1 51	109 2 38	Greenville, north base	2,352.6
					7 00 31	187 00 25	B. B. Towhead	2,138.8
Ben Lomond gin chimney	32 47 49.62	1,528.4	91 8 35.32	918.8	67 17 21	247 16 24	Lake Providence, south base.	2,991
					121 20 36	301 19 58	Arlington	2,111.5
Elton middle dormer window	32 49 58.44	1,800.1	91 9 7.30	189.8	262 7 12	82 7 25	Elton	647.6
					18 41 43	198 41 23	Arlington	3,029.6
Elton gin gable	32 50 8.90	274.1	91 8 59.17	1,538.7	298 30 17	118 30 26	Elton	489
					358 26 48	178 26 50	Sartoris	3,920.5
Duncannon gin ventilator	32 49 43.49	1,339.6	91 6 47.56	1,236.9	100 24 17	280 23 15	Elton	3,048.5
					169 46 20	349 46 8	Longwood	3,360.5
Duncannon gin chimney	32 50 22.44	691.2	91 6 18.74	487.3	57 29 18	237 28.29	Stack Island	2,815
					147 26 10	327 25 42	Longwood	2,500.4
Oakland gin chimney	32 50 46.72	1,430.1	91 6 .44	11.4	126 44 23	306 43 45	Longwood	2,273.1
					144 12 7	324 11 57	Duncan	850.4
Hollow Ridge Church spire (?)	32 51 15.68	482.9	91 5 48.01	1,248.3	102 17 54	282 17 9	Longwood	2,195.3
					164 26 45	344 26 30	Vista	2,620.4
Hollow Ridge gin chimney	32 51 30.18	929.5	91 5 16.07	417.8	90 24 29	270 23 27	Longwood	2,975.5
					143 34 48	323 34 16	Vista	2,582.2
Benham's southeast chimney	32 51 27.07	833.8	91 7 17.06	443.5	235 41 29	55 41 33	Longwood	200.6
					290 18 21	110 18 21	Duncan	1,594.1
Longwood gin chimney (?)	32 51 52.34	1,612.2	91 8 25.90	673.3	288 39 16	108 39 57	Longwood	2,069.3
					347 41 57	167 42 16	Stack Island	4,283.3

Vista gin chimney	32 52 11.34	349.3	91 6 53.72	1,396.5	281 8 52	51 9 18	Vista	1,291.2
McCullough's east chimney	32 53 10.92	336.3	91 5 54.92	1,427.5	19 17 21	199 17 12	Longwood	1,321.2
					337 34 48	157 35 4	Homochitto	1,954.1
					27 1 10	207 00 59	Vista	1,151.1
Cottonwood gin chimney (?)	32 53 16.30	502	91 6 5.50	143	332 38 53	152 39 14	Homochitto	2,220.6
					11 45 22	191 45 17	Vista	1,216.9
Mayersville warehouse, northwest gable (?)	32 54 .98	30.2	91 3 30.48	792.1	142 49 43	322 48 43	Wilson's Point	4,723.1
					154 58 26	334 57 18	Duncansby	7,684.8
River Light	32 55 28.31	871.9	91 4 14.88	386.6	355 30 10	175 30 13	Mayersville	2,106.8
					122 15 40	302 15 4	Wilson	2,010.6
Small house, west gable	32 55 27.65	851.6	91 4 14.52	377.2	355 43 9	175 43 12	Mayersville	2,082.9
					122 36 3	302 35 27	Wilson's	2,029.5
Dead tree (?)	32 55 29.50	908.6	91 5 12.44	323.2	217 15 30	37 15 48	Green	1,454.4
					322 6 41	142 7 16	Mayersville	2,703.9
Wilson's Point gin chimney	32 55 42.84	1,319.6	91 5 26.30	696.2	195 2 12	15 2 16	Wilson's Point	647.4
					239 13 43	59 14 9	Green	1,459
Grace's store, west gable	32 57 35.12	1,081.7	91 4 35.22	914.5	22 28 5	202 27 40	Wilson's Point	3,066.1
					103 8 17	283 7 44	Duncansby	1,611.5
Possum Point chimney	32 57 5.60	172.5	91 6 33.24	863.2	130 59 43	310 59 39	Possum Point	246.3
					229 32 40	49 33 11	Duncansby	1,965.4
Lewis's house chimney, north end	32 58 30.98	954	91 9 18.28	474.6	313 37 29	133 37 31	Lewis	162.1
					327 41 47	147 42 3	Hardin	1,479
Owen's store chimney (?)	32 57 40.03	1,233	91 11 24.89	646.3	175 13 56	355 13 56	Pilcher's Point	120.8
					185 41 25	5 41 28	Sarah's Island	1,218.3
Imbeden's store chimney	32 59 28.44	876	91 13 9.57	248.4	213 37 47	33 37 52	Ashton	439.2
					290 3 54	110 4 16	Poverty Point	1,133.2
Carolina gin, northwest gable	33 00 39.45	1,215.2	91 9 5.19	134.7	69 1 19	249 1 15	Carolina	199.4
					115 34 6	295 33 40	Graves	1,382
Graves's store, northeast chimney	33 2 16.91	520.9	91 9 42.48	1,102.3	289 17 17	109 17 46	Kershaw	1,442.9
					339 40 57	159 41 00	Sterling	460.5
Hunting Lodge gin, river gable	33 3 15.94	491	91 9 48.94	1,269.6	195 37 28	15 37 36	Raynor	1,404.5
					282 6 1	102 6 43	Bar	2,022.5
Cracraft's gin, southeast gable	33 3 50.50	1,555.6	91 9 45.19	1,172.1	224 18 32	44 18 38	Raynor	402.2
					308 22 3	128 22 43	Bar	2,398.2
Hilliard's pigeon-house	33 4 50.91	1,568.2	91 10 6.37	165.2	290 44 13	110 44 52	Leota	1,904.4
					332 10 40	152 10 57	Raynor	1,778.9
Hilliard's store chimney	33 4 52.10	1,604.9	91 10 6	155.6	190 37 57	10 37 57	Hilliard	81.3
					332 59 34	152 59 51	Raynor	1,807.1
Worthington's balcony	33 5 21.84	672.8	91 9 15.06	390.6	57 22 33	237 22 6	Hilliard	1,550.9
					147 2 21	327 1 55	Worthington	2,307.9
Marengo gin chimney	33 5 54.88	1,690.5	91 11 29.23	757.9	247 32 57	67 33 44	Worthington	2,405.5
					270 36 5	90 36 35	Barnard	1,401.1
Hill's chimney	33 7 49.20	1,515.6	91 8 44.99	1,166	115 49 37	295 49 14	Cottage	1,192.7
					155 26 7	335 25 43	Brooks	2,703.1

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Harwood white house, southeast chimney	33 9 40.42	1,245	91 6 28.32	733.7	282 2 1	102 2 43	Levee	2,035.7
					338 43 17	158 43 31	Chaff	1,872.7
Harwood's store chimney	33 9 39.42	1,214.2	91 6 11.70	303.1	208 56 57	28 57 00	Hawkins	310.3
					284 10 18	104 10 51	Levee	1,609.4
Stella warehouse, gable	33 9 3.04	93.6	91 5 24.89	645	104 28 50	284 28 10	Harwood	1,955.8
					142 38 9	322 37 47	Hawkins	1,751.5
Longwood warehouse, gable	33 9 15.33	472.2	91 5 18.54	488	93 3 47	273 3 4	Harwood	2,058
					129 36 13	309 35 47	Hawkins	1,590.3
Longwood gin chimney	33 9 26.64	820.6	91 4 37.49	971.4	89 58 50	269 58 31	Levee	881.1
					188 53 32	8 53 35	Telegraph	786
Williams chimney	33 10 57.25	1,763.5	91 4 25.98	678	17 38 21	197 38 16	Quarters	780.9
					60 00 48	240 00 15	Drift	1,808.7
Glenora gin chimney	33 11 12.52	385.6	91 4 7.66	198.4	30 21 55	210 21 40	Quarters	1,407.4
					112 12 23	292 11 35	Raft	2,438.4
Refuge oil-works, cup (?)	33 17 20.80	640.7	91 7 55.66	1,440	39 35 30	219 35 11	Starling	1,381.5
					98 32 24	278 31 36	Sunnyside	2,268.1
Refuge post-office chimney	33 17 34.38	1,059	91 8 6 14	158.8	22 20 7	202 19 54	Starling	1,603.2
					87 38 00	267 37 18	Sunnyside	1,973.4
Shelby's south chimney	33 17 44.83	1,380.9	91 8 7.95	205.6	355 34 45	175 34 46	Refuge	426.4
					78 9 55	258 9 14	Sunnyside	1,966.8
Craig's gin chimney	33 22 19.57	602.9	91 8 34.82	900	351 56 22	171 56 28	Highland	2,038.5
					37 36 35	217 36 16	Leland	1,466.9
Episcopal Church spire, Greenville	33 24 40.21	1,238.6	91 3 57.30	1,480.4	3 21 51	183 21 50	North Base	647.4
					93 4 12	273 3 24	Port Chicot	2,265.1

A 4.

REPORTS ON FINAL REDUCTION OF DISCHARGE OBSERVATIONS ON THE MISSISSIPPI RIVER BETWEEN SEPTEMBER 30, 1884, AND APRIL 10, 1885, AT (*a*) POINT PLEASANT, MO., (*b*) HELENA, ARK., (*c*) ARKANSAS CITY, ARK., (*d*) WARRENTON, MISS., (*e*) RED RIVER LANDING, LA., (*f*) CARROLLTON, LA., WITH TABULATED RESULTS.

(*a*) POINT PLEASANT, MO.

SAINT LOUIS, *February* 10, 1887.

CAPTAIN: I have the honor to submit the following report upon the final reduction of discharge observations made on the Mississippi River at Point Pleasant, Mo., between September 30, 1884, and April 2, 1885.

The party at this station was under the direction of Assistant Engineer E. E. Haskell. Mr. C. Brainard acted as recorder throughout the season. A steam engineer and two boatmen completed the party.

Observations were made upon a section about four miles below Point Pleasant, Mo. The location of the section is well determined. At each end of the section, bases 500, 1,000 and 1,500 feet long were measured at right angles to the section. On each bank a series of radial signals were set, which intersected the section at points 200 feet apart, called velocity stations. A signal was also set on each bank for determining the river width. The distance between these latter signals prior to December 2, 1884, was 4,832 feet, but subsequent to that date it was 4,745 feet. Distances from the water's edges from these signals were observed each day and determined the river width.

Soundings were located at the velocity stations by the intersecting signals. Intermediate between these stations and between the end stations and the shores an irregular number of soundings were taken, but subsequent to November 1 the usual number between velocity stations was three, one for each 50 feet of width. Prior to January 1, 1885, a large number of the soundings were located by sextant angles to one of the several bases. On October 14, 15, 20, and 21, the locations were made by angles only. The locations by angles and by signals in the main are quite discrepant, and it has been found impossible to reconcile the two methods of location. The notes of the location of the signals have not been recorded or the computations of the same preserved, so that it is now impossible to prove that the signals were in the right places to make intersections 200 feet apart. On the other hand the sextant angles show discrepancies among themselves so that it is certain that the sextant angle locations are erroneous. There is also some evidence that the signal locations are erroneous, but as all velocity measurements and all soundings after January 1, 1886, were located by these signals alone, it was decided to reject the sextant angles entirely and depend upon the signals for location. Soundings between stations were assumed to be at equal distances apart, and where more or less than three soundings were taken between two stations, depths were interpolated from them corresponding to the middle and quarter points. Between the end stations and the shores the soundings were assumed to have been taken at equal distances apart and the end areas computed on that assumption. After December 3 a sounding between the end station and the shore was usually located by giving its distance from the shore.

The instruments in use at this station were Price meter No. 5, a break-circuit clock, electric batteries, transit, level, sextant, sounding leads and lines, etc. (The instruments and manner of using them were similar to those at Helena, which have already been described in my report upon reduction of work at that station.)

For determining the coefficients to be used in reducing the registrations of the meter to velocity in feet per second, four series of observations were made which have been reduced in the usual manner. In addition to these observations two series of observations were made by the U. S. Coast and Geodetic Survey, to whom this meter was loaned during the summer of 1885. The following table gives the results of the several series of observations:

Date.	No. of observations.	*a*	*b*	e_a	e_b	e_b	Remarks.
1884.							
Oct. 10	22	+4.023	+0.184	±0.054	±0.087	±0.108	In still water.
1885.							
Jan. 17	8	+4.216	+0.150	±0.093	±0.042	±0.087	Do.
Jan. 28	12	+4.0[illegible]2	+0.183	±0.228	±0.075	±0.122	Do.
Mar. 27	37	+4.035	+0.240	±0.436	±0.104	.....	In running water.
July 17	22	+3.854	+0.209	±0.044	±0.014	±0.018	In still water, C. & G. S.
Sept. 19	25	+3.892	+0.232	±0.045	±0.015	±0.017	Do.

In the instructions governing this work the observers were required to note the time required for the meter-wheel to come to rest after being turned briskly with the hand. This was done at this station and the results are given in the following table:

Date.	Time.	Date.	Time.	Date.	Time.	Date.	Time.
	Sec.		*Sec.*		*Sec.*		*Sec.*
Oct. 22	99	Nov. 17	103	Dec. 9	135	Feb. 7	160
Oct. 23	100	Nov. 18	104	Dec. 10	136	Feb. 9	160
Oct. 24	98	Nov. 19	106	Dec. 12	137	Feb. 10	160
Oct. 25	98	Nov. 24	108	Dec. 13	138	Feb. 11	160
Oct. 27	98	Nov. 25	108	Dec. 15	134	Mar. 2	160
Oct. 29	98	Nov. 26	112	Dec. 31	140	Mar. 3	162
Oct. 30	99	Nov. 28	120	Jan. 12	80	Mar. 4	165
Oct. 31	101	Nov. 29	118	Jan. 13	80	Mar. 11	165
Nov. 3	100	Dec. 1	119	Jan. 14	80	Mar. 13	165
Nov. 5	98	Dec. 2	120	Feb. 2	80	Mar. 14	188
Nov. 10	103	Dec. 3	122	Feb. 3	78	Mar. 19	185
Nov. 14	105	Dec. 8	135	Feb. 5	170	Mar. 27	265

From this table it will be seen that the time required for the wheel to come to rest remained practically constant from October 22 to November 5, but from this date to December 31 there was a progressive change in the time. On January 12 the spring making the electric connection in the meter was broken and a new one put in, which materially changed the time. On February 5 the cup containing the electrical contact apparatus was filled with lard oil, again materially changing the time. Finally, on March 27, a new contact apparatus was put on, once again changing the time required for the wheel to come to rest.

Of the observations taken for rating the meter, those taken October 10 have been rejected on account of the range in velocities, 1.8 feet per second, being so small as to give the observations little weight. Those taken January 28 and March 27 have been rejected on account of the large errors of observation. Those taken January 17 have been retained and may be taken as determining the coefficients of the meter in its condition from January 12 to February 5, inclusive. It will be seen, however, that there are no observations that can be considered as determining the coefficients of the meter in its condition prior to January 12 or subsequent to February 5. If the length of time required for the meter to come to rest after being briskly turned with the hand is any criterion to judge by, then the meter materially changed its rate on both those dates, as it also did on March 27.

It was decided to reduce the observations, using as the coefficients of the meter the arithmetical means of the values obtained January 17, July 17, and September 19, which gave the equation,

$$y = +3.987\,x + 0.197.$$

These values have been used throughout the entire series of observations. The difference between any discharge as computed with these values and as computed with any of the observed values would be in the same ratio as the difference of mean velocities, and the percentage of this difference may be shown in the following manner: The maximum observed mean velocity throughout the season corresponds to about 1.25 registrations per second of the meter, and the minimum observed mean velocity corresponds to about 0.72 registrations per second. Computing the values of y corresponding to $x = 1.25$ and $x = 0.72$ by the several equations, it will be found that the maximum change that would arise in any of the computed discharges from taking any of the observed ratings instead of the adopted one would be less than 5 per cent. of the total discharge. This difference of 5 per cent. can probably also be taken as the limit of the errors due to changes in the condition of the meter and the failure to properly determine the amount of those changes.

The soundings have been corrected in the note-books for errors in the lead line, but subsequent to November 19 no corrections were necessary. The section as sounded October 14, 15, 20, and 21 has been plotted by means of the sextant angles and depths scaled at points 50 feet apart and used in computing the areas for these dates. Beginning with October 22, the notes have been copied directly on the computation sheets, interpolating depths where more or less than three soundings were taken between two adjacent velocity stations. All soundings between the end stations and shores were used, the supposition being made that they were at equal distances apart. After all the areas between the end stations had been computed they were summed, and, with the end areas, gave the total water area of the section. This computation was then checked by computing the water area directly from the sum of the soundings.

The areas between the middle points of the divisions into which the section was divided by the velocity stations were then summed and called partial areas. The

sum of the areas between the shore and the middle point of the full division next the shore gave the partial area belonging to the velocity station next the shore. After December 8 an additional velocity was measured about 50 feet from each shore. These velocities were used with the areas out to a point half-way to the regular velocity station. The sum of the partial areas gave the total area and formed a check on the computation of the partial areas.

The counting of the registrations of the meter had been done in the field and the results were adopted in the office computation. The length of time of an observation for velocity varied from one to four minutes. The computation of the velocities from the given times and registrations was performed by means of a table prepared for the purpose. The measurements for velocity were uniformly taken at six-tenths the depth from the surface, and no coefficients have been applied to the observed velocities to reduce them to mean vertical velocities. A part of the velocities were measured with the launch at anchor, and part with the launch held in position by means of the wheel and rudder. The partial areas were multiplied by the corresponding velocities, giving the partial discharges. The sum of the partial discharges gave the total discharge per second.

The results of the computation at this stage were then copied into the tabulation accompanying this report. A gauge was established at the section, but was read only when observations were made for discharge. These readings are given in the tabulation, and correspond to the mean time of the observations. The zero of the gauge was 267.35 feet above Cairo datum plane. As the gauge was not regularly read, the change of stage in twenty-four hours could not be given in the table. In the place of this has been given the readings of the regular gauge at New Madrid (Morrison's Landing), about 14 miles above the discharge section. Until about January 7 the readings of these two gauges agree very closely, but on that date a difference between their readings of 1 foot appears, and for the remainder of the season the readings are quite discrepant.

The computation of datum areas has been made in the following manner: Datum was assumed to correspond with the gauge-reading, 27.77 feet, observed January 14, 1885. Datum width was taken as 4,698 feet. The slope of the banks was assumed to be uniform below the stage of 10 feet, between 10 and 20 feet, and between 20 and 27.77 feet. Width at stage of 10 feet was taken as 4,620 feet, and at stage of 20 feet was taken as 4,675 feet. Datum areas have then been computed by the following formulæ, w being the observed width and h observed gauge-reading.

Below 20 and 27.77 feet:

$$\text{Datum area} = (27.77 - h)\frac{4698 + w}{2} + \text{water area.}$$

Below 10 and 20 feet:

$$\text{Datum area} = (27.77 - 20)\frac{4698 + 4675}{2} + (20 - h)\frac{4675 + w}{2} + \text{water area.}$$

$$= 36{,}414 + (20 - h)\frac{4675 + w}{2} + \text{water area.}$$

Below 10 feet:

$$\text{Datum area} = 36{,}414 + (20 - 10)\frac{4675 + 4620}{2} + (10 - h)\frac{4620 + w}{2} + \text{water area.}$$

$$= 82{,}889 + (10 - h)\frac{4620 + w}{2} + \text{water area.}$$

On December 9, 10, and 11 a bar appeared above water near the right bank, and the portion between the bar and shore was not sounded. The area of this portion on those dates has been computed from the soundings of December 8, corrected for change of stage, and added to the datum areas on those dates. The amounts added were 705, 632, and 705 square feet for December 9, 10, and 11, respectively. In the early part of the work some very large changes took place in datum areas, and in such a manner as to place in doubt the measurements of areas at that time.

Mean depth has been obtained by dividing the water area by the width, and mean datum depth by dividing the datum area by the datum width. Maximum depth has been taken directly from the soundings. Scour and fill has been obtained by taking differences of datum areas, scour being indicated by the positive sign. Mean velocity has been obtained by dividing the discharge by the water area. The direction and force of the wind has been given as noted by the observer.

A number of slope observations were made by reading gauges on each bank approximately ¼ mile above and below the section. The observations have been reduced, but the results are very discrepant, and have been rejected.

Accompanying this report is a plate on which are plotted the mean velocities, areas, and discharges, as abscissas to gauge heights as ordinates, the scale for each system of co-ordinates being given on the plate. The gauge readings and datum areas have been plotted on the plate in chronological order, but to make the gauge curve com-

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Goodrich, Odd Fellows' Hall, north gable	32 37 41.51	1,278.6	91 00 14.05	366.1	222 19 58	42 20 18	Shoot	1,412.8
					296 43 20	116 44 2	Edgewood	2,246.5
Illawana post-office, chimney	32 38 24.19	745.1	91 9 2.19	57.1	276 58 55	96 59 40	Shoot	2,222.5
					316 34 11	136 34 28	Airlie	1,210.5
Melbourne, chimney	32 38 39.97	1,231.2	91 10 14.72	383.6	286 37 21	106 38 13	.....	2,643.4
					319 40 04	139 40 28	Airlie	1,790.8
Wyly's house, east gable	32 45.23.44	722	91 10 26.13	680.3	245 43 58	65 44 47	Ingersoll	2,580.5
					311 51 20	131 52 24	Exern	4,140.9
Montgomery's house, cupola	32 45 55.01	1,694.4	91 10 9.12	237.3	267 21 55	87 22 35	Ingersoll	1,911.6
					324 44 24	144 45 19	Exern	4,575.2
Henderson gin, chimney	32 34 27.98	860.2	91 5 5.12	133.5	302 40 57	122 41 14	Gynn	961.1
					27 57 46	207 57 16	Terrapin	3,128.7
Cotton-gin, south gable	32 37 56.98	1,753.5	91 2 59.22	1,543.5	6 11 50	186 11 42	Foster	3,570.7
					34 54 06	214 53 41	Newman	2,080.5
Myer's store, south chimney	32 37 48.80	1,503.1	91 3 .16	4.2	38 40 55	218 40 31	.....do	1,865.1
					95 12 19	275 11 44	Burleigh	1,711.7
Tennessee gin, chimney	32 38 12.62	388.7	91 6 9.67	252	300 6 38	120 07 56	Newman	4,363.8
					352 52 35	172 52 41	Raleigh	2,370.5
Powell's house, southwest chimney	32 42 58.34	1,797	91 3 59.76	1,556.1	46 18 58	226 18 47	Hays	723.7
					84 33 52	264 33 23	Bass	1,420.9
Hall's store, west gable	32 43 10.68	328.9	91 3 49.89	1,299	72 53 30	252 52 55	.....do	1,749.2
					120 13 00	300 12 32	Point Lookout	1,550.1
Sartoris	32 48 1.67	51.4	91 8 55.08	1,432.9	55 47 40.7	235 46 54	South base	2,714.3
					90 36 55.8	270 36 06.1	North base	2,387.9
Arlington	32 48 25.27	778.4	91 9 44.64	1.161.3	299 25 .9	119 25 27.7	Sartoris	1,480.3
					22 58 24.5	202 58 4.6	South base	2,447.3
Stack Island	32 49 33.32	1,026.3	91 7 50	1,300.4	30 57 9.5	210 56 34.2	Sartoris	3,292
					54 54 14.5	234 53 12.4	Arlington	3,645.1
Elton	32 50 1.32	40.7	91 8 42.65	1,109.1	302 12 8.8	122 12 37.3	Stack Island	1,618.2
					28 35 48	208 35 14.4	Arlington	3,369.5
Longwood	32 51 30.85	950.2	91 7 10.50	273	15 50 36.7	195 50 15.3	Stack Island	3,763.5
					40 59 25.9	220 58 35.9	Elton	3,653.6
Duncan	32 51 9.11	280.6	91 6 19.57	508.8	38 33 42.3	218 32 53.3	Stack Island	3,773.4
					116 49 54.9	290 49 27.3	Longwood	1,484
Vista	32 52 37.63	1,159.1	91 6 15.04	390.9	2 28 34.8	182 28 32.3	Duncan	2,729.3
					35 2 6	235 1 35.9	Longwood	2,512.1

Discharge observations at Point Pleasant, Mo.—Continued.

Date.	Gauge-reading.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
			Area.		Depth.							
	At section.	At New Madrid.	Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Nov. 23	.....	6.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	5.83	6.08	62,609	164,686	13.7	35.0	28.0	4,583	— 281	3.181	199,173	Up, slight.
25	5.69	6.00	62,956	165,671	13.7	35.3	27.5	4,580	+ 985	3.186	200,562	
26	5.70	6.12	63,218	165,887	13.8	35.3	27.5	4,580	+ 216	3.155	199,464	West, strong.
27	.....	6.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	7.25	7.52	69,216	164,806	15.1	35.1	29.0	4,595	— 1,081	3.316	229,596	Down, strong.
29	7.65	7.92	71,018	164,738	15.4	35.1	29.5	4,598	— 68	3.305	234,717	
30	.....	8.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dec. 1	7.65	7.85	70,837	164,557	15.4	35.0	29.5	4,598	— 181	3.334	236,179	Up, slight.
2	7.49	7.60	70,815	165,286	15.4	35.2	29.5	4,609	+ 729	3.247	229,951	Up, slight.
3	7.15	7.25	68,879	164,911	15.0	35.1	29.0	4,603	— 375	3.344	230,316	
4	6.66	6.75	66,646	164,929	14.5	35.1	29.0	4,598	+ 18	3.272	218,180	Up, brisk.
5	6.12	6.13	63,455	164,219	13.8	34.9	28.0	4,594	— 710	3.237	205,435	Up, slight.
6	.....	5.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	.....	4.89	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	4.56	4.46	56,139	164,038	12.3	34.9	26.5	4,575	— 181	3.098	173,950	Calm.
9	4.17	4.10	53,068	163,465	12.6	34.8	25.5	4,225	— 573	3.088	163,877	Calm.
10	3.94	3.95	52,650	164,032	12.6	34.9	25.0	4,184	+ 567	3.144	165,556	
11	4.15	4.29	53,170	163,659	12.6	34.8	25.5	4,225	— 373	3.217	171,069	NE., slight.
12	5.00	5.10	57,348	163,237	12.5	34.7	26.5	4,580	— 422	3.223	184,834	Down, strong.
13	6.26	6.25	63,935	164,062	13.9	34.9	27.0	4,598	+ 825	3.301	211,073	N., slight.
14	.....	7.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	8.01	8.25	71,936	164,012	15.6	34.9	29.0	4,613	— 50	3.291	236,750	NE., light.
16	9.02	9.25	78,051	165,467	16.9	35.2	30.0	4,619	+1,455	3.503	273,389	Up, brisk.
17	.....	10.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	.....	10.58	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	.....	10.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	.....	10.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	.....	10.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	.....	9.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	.....	9.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	.....	8.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	.....	8.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	.....	7.88	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	.....	8.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	.....	10.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	.....	12.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	.....	14.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	
31	17.45	17.50	114,195	162,512	24.5	34.6	39.0	4,661	—2,955	4.404	502,908	Down, strong.
1885.												
Jan. 1	19.96	19.90	126,615	163,122	27.1	34.7	40.0	4,675	+ 610	4.841	612,987	Down, strong.
2	.....	21.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	.....	22.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	.....	22.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	.....	22.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	.....	21.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	23.34	22.38	143,943	164,735	30.7	35.1	42.0	4,689	+1,613	4.947	712,038	S., brisk.
8	23.61	22.68	145,958	165,483	31.1	35.2	43.0	4,689	+ 748	4.868	710,556	S., brisk.
9	24.05	23.15	147,615	165,075	31.5	35.1	43.0	4,689	— 408	5.086	750,701	Down, strong.
10	24.95	24.10	153,305	166,543	32.7	35.5	44.0	4,691	+1,468	5.001	766,672	S., breeze.
11	.....	25.18	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	26.92	25.95	158,744	162,737	33.8	34.6	45.0	4,698	—3,806	.....	.....	
13	27.63	26.26	157,873	158,531	33.6	33.7	46.0	4,698	—4,206	5.168	815,839	Down, slight.
14	27.77	26.46	162,149	162,149	34.5	34.5	46.5	4,698	+3,618	5.193	842,106	Up, slight.
15	.....	26.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	.....	26.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	.....	27.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	.....	28.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	.....	28.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	.....	29.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	.....	30.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	.....	30.83	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	.....	31.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	.....	31.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	.....	31.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	.....	31.42	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	.....	31.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	.....	30.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	.....	28.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	.....	26.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	
31	.....	23.62	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Kershaw	33 2 1.44	44.4	91 8 50	1,297.8	12 35 57.2	192 35 45	Carolina	2,661.2
					40 28 6.2	220 22 31.7	Graves	2,532.7
Sterling	33 2 2.89	89	91 9 36.32	941.4	272 7 58.9	92 8 24.2	Kershaw	1,202.8
					12 31 49	192 31 39.8	Graves	2,022.3
Bar	33 3 2.17	66.8	91 8 32.72	848.8	18 28 38.7	198 28 29.3	Kershaw	1,923.8
					42 6 36.8	222 6 2.1	Sterling	2,461.2
Raynor	33 3 59.84	1,843.3	91 9 34.36	891.2	318 00 12.8	138 00 46.4	Bar	2,390.4
					0 48 22.8	180 48 21.7	Sterling	3,602.9
Leota	33 4 27.98	861.9	91 8 54.46	1,412.4	347 57 19.1	167 57 31	Bar	2,703
					50 3 15.9	230 2 54.1	Raynor	1,350.2
Hilliard	33 4 54.70	1,685	91 10 5.42	140.5	294 5 79.3	114 5 58	Leota	2,016.1
					334 30 47.9	154 31 4.8	Raynor	1,872.1
Worthington	33 6 24.70	760.9	91 10 3.48	90.3	333 31 44.4	153 32 22.1	Leota	4,016.5
					1 2 18.5	181 2 12.4	Hilliard	2,773
Barnard	33 5 54.40	1,675.7	91 10 35.21	912.9	221 23 27.5	41 23 44.8	Worthington	1,244
					337 12 59.4	157 13 15.7	Hilliard	1,995
Moore	33 7 32.10	988.8	91 11 51.6	1,323.5	306 39 42	126 40 40.8	Worthington	3,477
					326 50 1	146 50 41.5	Barnard	3,595.2
Wickliffe	33 7 44.33	1,365.5	91 10 33.42	866.2	342 26 32.2	162 26 48.6	Worthington	2,573.2
					79 23 56.9	259 23 14.5	Moore	2,047.4
Haley	33 8 25.73	792.6	91 11 8.73	226.2	324 19 50.7	144 20 10	Wickliffe	1,569.7
					33 35 15.2	213 34 52.1	Moore	1,983.2
Cottage	33 8 6.06	186.7	91 9 26.41	684.5	68 56 6	248 55 24	Wickliffe	1,861.6
					102 52 41.1	282 51 45.2	Haley	2,720.6
Brooks	33 9 9	277.2	91 9 28.35	734.6	358 30 42.4	178 30 43.5	Cottage	1,939.5
					62 52 50.8	242 51 55.9	Haley	2,923.1
Ford	33 8 49.85	1,535.6	91 7 53.74	1,392.5	60 40 58.2	240 40 7.5	Cottage	2,754.7
					108 31 50.6	288 30 58.9	Brooks	2,521.8
Hill	33 8 11.60	357.3	91 7 52.24	1,358.8	86 00 20.3	265 50 28.8	Cottage	2,446.9
					178 6 7.6	358 6 6.8	Ford	1,179
Chaff	33 8 43.77	1,348.2	91 6 2.10	54.4	70 51 52.8	250 50 52.6	Hill	3,021.6
					98 42 57.8	278 41 56.8	Ford	2,899.4
Harwood	33 9 18.91	582.5	91 6 37.96	983.7	319 21 36.3	139 21 55.9	Chaff	1,426.8
					65 30 3.5	245 29 22.1	Ford	2,158.4
Hawkins	33 9 48.23	1,485.6	91 6 5.91	158.1	357 9 30.1	177 9 32.2	Chaff	1,988.4
					42 36 15.3	222 35 57.7	Harwood	1,297

Engineer A. H. Weber took charge of the party October 10 and remained in charge to the end of the season. Mr. C. W. Stewart acted as recorder throughout the season. A steam engineer and two boatmen completed the party.

Observations at this station were made upon two sections about three-quarters of a mile apart. The first one, called the high-water section, was a short distance below the elevator, and if prolonged would nearly pass through the triangulation station Helena. The high-water section was not quite identical with the section used in 1882. The two sections had a common point on the left bank, but the high-water section at the right bank was about 200 feet above the section used in 1882. It was located by Mr. Quintus, who measured a 1,200-foot base and set a system of ranges which intersected the section at intervals of 300 feet. Subsequently Mr. Weber discovered that an error had been made in measuring this base and that its real length was 1,194 feet. This error, with changes in the measured angles, reduced the intervals into which the section was divided from 300 feet to 297.85 feet. The ends of the section were marked by range signals, the one on the right bank being at the upper end of the base line and called U. B. The one on the left bank was called A. The distance from U. B. to A. was 4,794.8 feet. The points where the ranges intersected the section were called stations, velocities being observed at those points. The stations were numbered from the right bank, station 1 being 62.6 feet from U. B., and station 16, 264.2 feet from A.

In the system of intersecting ranges the pivot signal was 3,542.5 feet above the section and a perpendicular from it intersected the section 360 feet from U. B. The other signals were beyond the pivot at such distances as would give good ranges. The minimum angle for locating a point on the section with this set of signals was 38° 37′. Between the signals locating the velocity stations secondary signals were set to intersect the section midway between the velocity stations. By bisecting the intervals between signals, the distance between velocity stations could be divided into four equal parts, and soundings were taken at all these points with few exceptions.

As the lower stages of the river were reached in November, several undesirable features developed in the high-water section. The water for about 1,200 feet out from the left bank became too shallow to allow the launch to be used. The presence of the bar just below, and reaching up to the section, caused the water to be deflected toward the right bank, the current in the middle of the section being no longer normal to the section. As the water continued to fall the bar appeared above water and formed a pocket along the left bank, in which there was no current.

It was decided therefore to change the section, and a low-water section was located about three-quarters of a mile above the high-water section. This section proved a very satisfactory one and was used until January 7, when observations were resumed at the high-water section. The manner of locating velocity stations and soundings was similar to that already described for the high-water section. The points marking the ends of the section were designated U^1. B^1. and A^1, and the disance between them was 4,502.6 feet. The pivot signal was 2,966.8 feet above the section and a perpendicular from it intersected the section 568.5 feet from U^1. B^1. The signals were set to locate velocity stations 200 feet apart and soundings 50 feet apart. Station 1 was 168.5 feet from U^1.B^1, and station 22, 134 feet from A^1. The signals were located by angles from a 1,000-foot base at right angles to the section and downstream from U^1. B^1. The minimum angle for locating points on the section was 37° 1′.

As the river rose in January, the low-water section became unsuitable on account of the water passing back of the towhead down Helena Chute. On January 7 the measured chute discharge was 3,539 cubic feet per second, and this amount would rapidly increase with the stage.

On returning to the high-water section, the old set of signals were used until January 13, when a new set of signals, intersecting the section at intervals of 200 feet, came into use. A new point on the section 36.5 feet back of U. B. was taken for U. B. The pivot signal was 7,133.7 feet above the section and a perpendicular from it intersected the section 1,569.8 feet from U. B. Station 1 was 169.8 feet from U. B. and station 24, 61.5 feet from A. The distance from U. B. to A. was 4,831.3 feet. This section and set of signals were used until the end of the observations. The minimum angle for locating a point on the section was 65° 25′.

The distances of the water edges from the end signals were determined each day, and determined the river width. To facilitate the measurement of these distances stakes were set at intervals between the end signals and the water edge.

The accompanying sketch on a scale of 1:10,000 shows the location of the sections. The soundings shown on the sketch were taken December 1, 1883, and are given to show the general shape of the bed at this station.

The instruments in use at this station consisted of Price meter No. 10, a Morse register, a break-circuit clock, electric batteries, transit, level, sextant, sounding leads and lines, etc.

The meter was made under the direction of Mr. W. G. Price, the inventor. It is of the anemometer type and does not differ in principle from the Ellis meters previously

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Richardson	33 21 46.29	1,425.9	91 6 30.37	785	71 17 46.9	251 16 44.5	Highland	3,095.3
					121 19 26.4	301 18 43.4	Halliday	2,366.6
Whittaker	33 22 57.68	1,776.7	91 6 47.74	1,233.7	348 27 40.6	168 27 50.2	Richardson	2,244.7
					58 21 27.2	238 20 53.7	Halliday	1,847.3
Jack	33 22 22.04	678.9	91 5 54.04	1,396.7	40 27 27.3	220 27 7.3	Richardson	1,447.3
					128 21 12.2	308 20 42.7	Whittaker	1,769.8
Bachelors' Bend Towhead	33 23 35.23	1,085.2	91 5 34.93	902.5	12 21 25.6	192 21 15.1	Jack	2,308.4
					58 25 16.2	238 24 36.1	Whittaker	2,208.9
Base, south end (Greenville)	33 23 18.19	560.4	91 4 32.44	838.4	50 38 50.1	230 38 5.2	Jack	2,728
					108 00 37.5	288 00 3.1	B. B. Towhead	1,698.3
Base, north end (Greenville)	33 24 19.23	592.4	91 3 58.77	1,518.4	61 23 53.6	241 23 .6	B. B. Towhead	2,830.7
					24 50 9.6	204 49 51.1	South Base	2,072
Telegraph	33 9 51.84	1,596.9	91 4 32.80	849.7	87 21 50	267 20 59	Hawkins	2,415.1
					177 17 13	357 17 12	Quarters	1,272.1
Point Chicot	33 24 44.14	1,359.6	91 5 24.84	641.7	289 1 51	109 2 38	Greenville, north base	2,352.6
					7 00 31	187 00 25	B. B. Towhead	2,138.8
Ben Lomond gin chimney	32 47 49.62	1,528.4	91 8 35.32	918.8	67 17 21	247 16 24	Lake Providence, south base.	2,991
					121 20 36	301 19 58	Arlington	2,111.5
Elton middle dormer window	32 49 58.44	1,800.1	91 9 7.30	189.8	262 7 12	82 7 25	Elton	647.6
					18 41 43	198 41 23	Arlington	3,029.6
Elton gin gable	32 50 8.90	274.1	91 8 59.17	1,538.7	298 30 17	118 30 26	Elton	489
					358 26 48	178 26 50	Sartoris	3,920.5
Duncannon gin ventilator	32 49 43.49	1,339.6	91 6 47.56	1,236.9	100 24 17	280 23 15	Elton	3,043.5
					169 46 20	349 46 8	Longwood	3,360.5
Duncannon gin chimney	32 50 22.44	691.2	91 6 18.74	487.3	57 29 18	237 28 29	Stack Island	2,815
					147 26 10	327 25 42	Longwood	2,500.4
Oakland gin chimney	32 50 46.72	1,439.1	91 6 .44	11.4	126 44 23	306 43 45	Longwood	2,273.1
					144 12 7	324 11 57	Duncan	850.4
Hollow Ridge Church spire (†)	32 51 15.68	482.9	91 5 48.01	1,248.3	102 17 54	282 17 9	Longwood	2,195.3
					164 26 45	344 26 30	Vista	2,620.4
Hollow Ridge gin chimney	32 51 30.18	929.5	91 5 16.07	417.8	90 24 29	270 23 27	Longwood	2,975.5
					143 34 48	323 34 16	Vista	2,582.2
Benham's southeast chimney	32 51 27.07	833.8	91 7 17.06	443.5	235 41 29	55 41 33	Longwood	206.6
					290 18 21	110 18 21	Duncan	1,594.1
Longwood gin chimney (†)	32 51 52.34	1,612.2	91 8 25.90	673.3	288 39 16	108 39 57	Longwood	2,069.3
					347 41 57	167 42 16	Stack Island	4,283.3

The formation and solution of the normal equations and the computation of the mean errors were then made in the usual manner and checked by a suitable control or by duplication. The following table contains the results of the observations for rating the meter at this station, the mean errors of observation and of the determination of the constants:

Date.	No. of observations.	a.	b.	Mean error of observations.	Mean error of a.	Mean error of b.
Oct. 7, 1884	24	+4.093	+0.091	±0.071	±0.035	±0.034
Oct. 17, 1884	17	+3.802	+0.263	±0.126	±0.086	±0.074
Oct. 24, 1884	15	+4.017	+0.206	±0.094	±0.062	±0.060
Nov. 5, 1884	20	+4.090	+0.134	±0.076	±0.042	±0.036
Dec. 3, 1884	20	+3.954	+0.350	±0.087	±0.041	±0.040
Jan. 3, 1885	10	+4.016	+0.175	±0.068	±0.036	±0.043

For reducing the observed velocities in the discharge measurements, the arithmetical mean of the values a and b have been adopted and the equation between the variables becomes

$$y = 3.995\,x + 0.203.$$

These values have been used throughout the entire series of observations, the impossibility of determining the period over which each rating should be used making this course necessary. The difference between any discharge as computed by any of the observed ratings would be in the same ratio as the difference of mean velocities, and the percentage of this difference may be shown in the following manner. The maximum mean velocity throughout the season corresponds to about 1.18 revolutions per second of the meter and the average of the mean velocities for the season corresponds to about 0.90 revolutions per second. Computing the values of y corresponding to x=1.18 and x=0.90 by the several ratings and by the adopted rating, we obtain the values in the following table, v representing the difference between the velocity, y, as computed by an observed rating and y_0, as computed by the adopted one.

Date.	$x = 1.18$		$x = 0.090$	
	y.	v.	y.	v.
Oct. 7, 1884	4.921	+0.004	3.775	−0.024
Oct. 17, 1884	4.749	−0.168	3.685	−0.114
Oct. 24, 1884	4.946	+0.029	3.821	+0.022
Nov. 5, 1884	4.960	+0.043	3.815	+0.016
Dec. 3, 1884	5.016	+0.099	3.909	+0.110
Jan. 3, 1885	4.914	−0.003	2.789	−0.010
Adopted	4.917		3.769	

The maximum value of the ratio $\frac{v}{y_0}$, for $x = 1.18$ is 0.034

and the average value without regard to sign is 0.012. For $x = 0.90$, the above ratios are 0.030 and 0.013 respectively. The maximum change that would arise in any of the computed discharges from taking any of the observed ratings instead of the adopted one would be 3 per cent. of the total discharge.

The next step in the reduction was to correct the soundings in the note-books for errors in the lead-line. The first determination of the lead-line corrections recorded in the notes was made October 11, prior to which date the corrections to be applied are uncertain. Subsequent to that date the lead-line corrections were well determined and generally were kept quite small by retagging of the line. A large portion of the time no correction at all was necessary.

The notes were then copied on the computation sheets and also the gauge reading, width, and direction and force of wind. The distances of the end soundings from the water's edge were computed and copied on the sheet at the beginning and end of the series of soundings. The areas included between the end soundings and the shores were computed as right-angle triangles. The soundings on the high water section, prior to October 14 were taken 150 feet apart, between October 14 and January 14, 75 feet apart, but all other soundings with very few exceptions were taken 50 feet apart.

Geographical positions between Greenville, Miss., and Donaldsonville, La.—Continued.

Name of station.	Latitude.	Seconds in meters.	Longitude.	Seconds in meters.	Azimuth.	Back azimuth.	To station.	Distance.
	° ′ ″		° ′ ″		° ′ ″	° ′ ″		*Meters.*
Harwood white house, southeast chimney	33 9 40.42	1,245	91 6 28.32	733.7	282 2 1	102 2 43	Levee	2,035.7
					338 43 17	158 43 31	Chaff	1,872.7
Harwood's store chimney	33 9 39.42	1,214.2	91 6 11.70	303.1	208 56 57	28 57 00	Hawkins	310.3
					284 10 18	104 10 51	Levee	1,609.4
Stella warehouse, gable	33 9 3.04	93.6	91 5 24.89	645	104 28 56	284 28 10	Harwood	1,955.8
					142 38 9	322 37 47	Hawkins	1,751.5
Longwood warehouse, gable	33 9 15.33	472.2	91 5 18.54	488	93 3 47	273 3 4	Harwood	2,058
					129 36 13	309 35 47	Hawkins	1,590.3
Longwood gin chimney	33 9 26.64	820.6	91 4 37.49	971.4	89 58 50	269 58 31	Levee	881.1
					188 53 32	8 53 35	Telegraph	786
Williams chimney	33 10 57.25	1,763.5	91 4 25.98	678	17 38 21	197 38 16	Quarters	780.9
					60 00 48	240 00 15	Drift	1,808.7
Glenora gin chimney	33 11 12.52	385.6	91 4 7.66	198.4	30 21 55	210 21 40	Quarters	1,407.4
					112 12 23	292 11 35	Raft	2,438.4
Refuge oil-works, cup (?)	33 17 20.80	640.7	91 7 55.66	1,440	39 35 30	219 35 11	Starling	1,381.5
					98 32 24	278 31 36	Sunnyside	2,268.1
Refuge post-office chimney	33 17 34.38	1,059	91 8 6 14	158.8	22 20 7	202 19 54	Starling	1,603.2
					87 38 00	267 37 18	Sunnyside	1,973.4
Shelby's south chimney	33 17 44.83	1,380.9	91 8 7.95	205.6	355 34 45	175 34 46	Refuge	426.4
					78 9 55	258 9 14	Sunnyside	1,966.8
Craig's gin chimney	33 22 19.57	602.9	91 8 34.82	900	351 56 23	171 56 28	Highland	2,038.5
					37 36 35	217 36 16	Leland	1,466.9
Episcopal Church spire, Greenville	33 24 40.21	1,238.6	91 3 57.30	1,480.4	3 21 51	183 21 50	North Base	647.4
					93 4 12	273 3 24	Port Chicot	2,265.1

Computation of discharge of Mississippi River at Helena, Arkansas.

Date, March 20, 1885. Gauge-reading, 33.11 feet. Width, 4,787 feet. Direction and force of wind, XII. Light.]

Station.	Soundings.	Area.		Registrations.	Time.	Velocity per second.	Partial discharge.
		Between soundings.	Partial.				
V. e. r. b. 61 ft.	*Feet.*	*Sq. ft.*	*Sq. ft.*	*No.*	*Sec.*	*Feet.*	*Cubic feet.*
1-2	18.0	549					
	26.6	1,115					
1	49.7	1,907	9,084	124.0	150	3.51	31,885
	57.1	2,670					
1-2	56.6	2,843					
	52.7	2,732					
2	70.0	3,068	12,415	154.0	150	4.30	53,385
	66.0	3,400					
1-2	62.6	3,215					
	61.6	3,105					
3	60.6	3,055	11,945	179.0	150	4.97	59,367
	57.6	2,955					
1-2	55.6	2,830					
	54.7	2,757					
4	53.2	2,698	10,637	175.0	150	4.86	51,696
	51.2	2,610					
1-2	51.7	2,572					
	51.2	2,573					
5	50.7	2,547	10,090	180.0	150	5.00	50,450
	49.7	2,510					
1-2	48.7	2,460					
	47.7	2,410					
6	46.8	2,363	9,570	184.0	150	5.10	48,807
	48.7	2,387					
1-2	47.7	2,410					
	47.3	2,375					
7	46.8	2,353	9,420	184.5	150	5.12	48,230
	47.3	2,352					
1-2	46.3	2,340					
	43.9	2,255					
8	43.4	2,183	8,598	182.0	150	5.05	43,420
	41.5	2,122					
1-2	40.0	2,038					
	39.0	1,975					
9	39.0	1,950	7,720	218.0	150	6.01	46,397
	38.1	1,927					
1-2	36.6	1,868					
	35.2	1,795					
10	35.2	1,760	6,982	192.0	150	5.32	37,144
	34.3	1,737					
1-2	33.3	1,690					
	31.9	1,630					
11	31.0	1,573	6,140	190.0	150	5.26	32,296
	28.5	1,487					
1-2	29.5	1,450					
	28.5	1,450					
12	28.0	1,413	5,570	185.0	150	5.13	28,574
	26.6	1,365					
1-2	27.1	1,342					
	26.1	1,330					
13	25.6	1,293	5,065	151.0	150	4.22	21,374
	23.7	1,232					
1-2	24.7	1,210					
	25.2	1,248					
14	25.2	1,260	4,940	154.0	150	4.30	21,242
	24.2	1,235					
1-2	23.7	1,197					
	24.7	1,210					
	24.7	1,235	4,890	132.0	150	3.72	18,191
	24.2	1,223					
1-2	24.7	1,222					
	24.7	1,235					
16	24.7	1,235	4,978	148.0	150	4.14	20,609
	25.2	1,248					
1-2	25.2	1,260					
	24.7	1,247					
17	24.7	1,235	4,940	138.0	150	3.88	19,167
	24.7	1,235					
1-2	24.2	1,223					
	23.7	1,197					
	24.2	1,198	4,815	136.0	150	3.82	18,393
	24.2	1,210					
1-2	24.2	1,210					
	24.7	1,222					

Computation of discharge of Mississippi River at Helena, Arkansas—Continued.

Station.	Soundings.	Area.		Registrations.	Time.	Velocity per second.	Partial discharge.
		Between soundings.	Partial.				
W. e. r. b. 61 ft.	*Feet.*	*Sq. ft.*	*Sq. ft.*	*No.*	*Sec.*	*Feet.*	*Cubic feet.*
19	24.2	1,223	4,902	135.0	150	3.80	18,628
	24.7	1,222					
1-2	24.7	1,235					
	24.7	1,235					
20	24.7	1,235	5,045	124.0	150	3.50	17,658
	26.1	1,270					
1-2	26.1	1,305					
	26.1	1,305					
21	26.6	1,318	5,320	112.0	150	3.19	16,971
	27.1	1,342					
1-2	27.1	1,355					
	26.8	1,348					
22	26.6	1,335	5,343	107.0	150	3.05	16,296
	26.6	1,330					
1-2	26.6	1,330					
	26.1	1,317					
23	24.7	1,270	4,785	103.0	150	2.95	14,116
	22.2	1,173					
1-2	18.8	1,025					
	14.5	832					
24	7.0	538	1,461	50.0	150	1.54	2,250
W. e. l. b. 26 ft.		91					
		164,655	164,655	= Area.			736,546 = Disch'ge.

The results of the computation at this stage were then copied into the tabulation accompanying this report. The gauge-reading for days on which areas were measured were taken from the observer's notes, and correspond to the mean time of the observations. The readings given for other days are the means of daily readings and correspond to 12 m. Until February 7 the gauge was read three times a day; subsequent to that date, twice daily. The gauge read was the standard gauge at Helena, the zero of which is 161.98 feet above Cairo datum plane. The rise or fall in twenty-four hours for any date is the difference between the mean-gauge readings for that day and the preceding one.

The computation of datum areas has been made in the following manner: For the high-water section datum was assumed to correspond to the reading 47.10 feet on the gauge. The datum width was taken as 4,851 feet, that being the measured width on January 29, 1885, when the gauge read 40.62 feet. The area included between datum and the water-surface of January 29 would therefore be 4,851 (47.10 — 40.62) = 31,434 square feet. The slope of the banks down to 16 feet on the gauge is quite uniform, and datum areas above 16 feet have been computed by the formula,

$$\text{Datum area} = 31434 + (40.62 - h)\left(\frac{4851 + w}{2}\right) + \text{water area},$$

where h = gauge reading and w = width.

At an elevation corresponding to 16 feet on the gauge the left bank becomes less abrupt, and datum areas below that stage have been computed by the formula,

$$\text{Datum area} = 31434 + (40.62 - 16)\left(\frac{4851 + 4610}{2}\right) + (16 - h)\left(\frac{4610 + w}{2}\right) + \text{water area.}$$

$$= 147887 + (16 - h)\left(\frac{4610 + w}{2}\right) + \text{water area.}$$

On November 20 450 square feet were added to the datum area for portion not sounded. From November 21 to 26, inclusive, soundings were not taken beyond station 12, about 3,600 feet from right bank. The area of the portion between station 12 and left bank and below the 16-foot stage has been computed from the soundings of November 19 and added to the observed areas, the formula then becoming,

$$\text{Datum area} = 158813 + (16 - h)\ 3260 + \text{water area.}$$

The datum area for December 9 was computed in the usual manner, except that soundings of December 4, corrected for change of stage, were used for 707 feet from left bank, which was too shoal to be sounded. The water area in this portion, as thus computed, was 3,384 square feet, which should really have been added to the observed area. There was no velocity in this portion of the section. The width should properly be 4,535 feet.

For the low-water section datum was assumed at the water-surface on January 7, 1885, the gauge reading 31.94 feet. The width on that day was 4,338 feet, which was taken as datum width. The slope of the banks at this section changes at elevations corresponding to readings of 20 and 14 feet on the gauge, the width on those stages being 4,163 and 3,770 feet, respectively. Datum areas have therefore been computed by the following formula:

Above 20 feet on gauge,

$$\text{Datum area} = (31.94 - h)\left(\frac{4338 + w}{2}\right) + \text{water area.}$$

Between 14 and 20 feet on gauge,

$$\text{Datum area} = 11.94\left(\frac{4338 + 4163}{2}\right) + (20 - h)\left(\frac{4163 + w}{2}\right) + \text{area.}$$

$$= 50745 + (20 - h)\left(\frac{4163 + w}{2}\right) + \text{water area.}$$

Below 14 feet on gauge,

$$\text{Datum area} = 50745 + (20 - 14)\left(\frac{4163 + 3770}{2}\right) + (14 - h)\left(\frac{3770 + w}{2}\right) + \text{area.}$$

$$= 74544 + (14 - h)\left(\frac{3770 + w}{2}\right) + \text{water area.}$$

Mean depth has been obtained by dividing the water area by the width, and mean datum depth has been obtained by dividing the datum area by the datum width. Maximum depth has been taken directly from the soundings. For the high-water section the changes in width are very large and are the cause of large changes in the mean depths when no change in section takes place. The range in the values of mean datum depth, subsequent to October 11, is 2.3 feet.

Scour or fill has been obtained by taking difference of datum areas. Scour is indicated by the positive sign.

Mean velocity has been obtained by dividing the discharge by the water area. Being dependent on both these quantities, it is affected to a greater or less degree by the errors of each and can hardly be regarded as an independent quantity. It may be affected by errors in the measurement or computation of the area or in the computation of the discharge, but the variations in its values in this series of observations come mainly from variations in the observed velocities themselves. The computation has been so arranged that one could readily compare the area, velocity, or discharge of any particular part of the section for one day with the same quantities of the same portion for days preceding or following. In a great many instances this has been done, and it has been observed that the change in velocity from one day to another where marked usually extended throughout the section. As it is hardly reasonable to suppose that the velocity of the stream actually changed as indicated by the mean velocities, the conclusion is unavoidable that the measured velocities are in error from some cause affecting all the velocities observed that day. One source of error lies in the fact that the meter measures motions which take place in a vertical direction, and that when the meter rises and falls under the action of the waves these motions are added to the velocity of the current. A striking illustration of the effect of this error is shown in the following table, where the parts making up the total discharges on three consecutive days are given. On March 12 the observer states that "high waves kept launch rocking up and down and from side to side" to such an extent as to make the work unreliable. It will be seen from the table that the velocities on that day are too large as compared with the preceding and following days. It will be also seen from the series of discharges that the discharge on this day is about 35,000 cubic feet, or about 6 per cent. too large. This error is without doubt caused by the meter measuring other motions than that of the current. Although this is an extreme case and rejected by the observer's notes, yet it is valuable as showing the amount of error that may arise in that way. It must not be taken as a measure of the precision of the work, neither must it be taken as condemning the use of the current meter.

In some instances, however, the change in mean velocity is due to a change in one or more measured velocities where the partial areas are large. Since, in determining the mean velocity and discharge, each observed velocity has weight according to its partial area, it would seem advisable to either measure the velocities where partial areas are large with greater precision than those where the partial areas are small, or else distribute the velocity station so as to give nearly equal partial areas.

Station.	Partial area.			Observed velocity.			Partial discharge.		
	Mar. 11.	Mar. 12.	Mar. 13.	Mar. 11.	Mar. 12.	Mar. 13.	Mar. 11.	Mar. 12.	Mar. 13.
1	6,316	6,674	7,131	3.11	3.53	3.48	19,643	23,559	24,816
2	10,300	10,887	11,138	4.73	4.57	4.53	48,719	49,753	50,344
3	9,775	10,375	10,710	4.89	4.86	4.69	47,800	50,423	50,238
4	8,638	9,175	9,492	4.70	5.08	4.62	40,599	46,609	43,853
5	7,852	8,525	8,765	4.92	5.34	5.02	38,681	45,524	44,000
6	7,513	7,950	8,440	5.05	5.18	5.53	37,941	41,181	46,673
7	7,187	7,675	8,043	4.97	5.24	4.98	35,719	40,217	40,054
8	6,575	7,075	7,500	4.94	5.40	4.46	32,481	38,205	33,600
9	5,500	6,225	6,605	4.86	5.46	5.14	26,730	33,989	38,950
10	4,850	5,350	5,692	4.33	4.97	5.00	21,001	26,590	28,460
11	4,113	4,463	4,878	4.33	5.05	4.76	17,809	22,538	23,195
12	3,437	3,962	4,237	4.04	4.65	3.81	13,885	18,423	16,143
13	2,950	3,525	3,850	3.90	4.34	4.21	11,505	15,299	16,209
14	2,912	3,325	3,798	3.50	4.25	3.62	10,196	14,131	13,731
15	2,937	3,363	3,742	3.56	3.77	3.69	10,456	12,679	13,808
16	3,028	3,475	3,838	3.56	3.80	3.21	10,762	13,205	12,329
17	3,100	3,412	3,800	3.35	3.80	3.32	10,385	12,966	12,616
18	3,025	3,300	3,825	3.40	3.21	3.09	10,285	10,593	11,819
19	3,050	3,400	3,637	3.03	3.13	3.17	9,242	10,642	11,529
20	3,162	3,525	3,913	2.89	3.32	3.30	9,138	11,703	12,913
21	3,350	3,825	4,150	3.13	3.48	3.08	10,486	13,311	12,782
22	3,438	3,938	4,187	2.84	2.92	3.09	9,764	11,499	12,938
23	3,254	3,795	4,331	2.31	2.20	2.66	7,517	8,349	11,529
	116,268	127,219	135,602	4.221	4.491	4.256	490,744	571,388	577,563

The direction of the wind is indicated by dividing the horizon into 12 parts and numbering the parts the same as the hours on a clock dial, XII being up-stream and indicating a down-stream wind. The force of the wind is not very well defined and is given in the tabulation as contained in the notes. In regard to the observed velocities it is quite probable that the direction of the wind is of more importance than the force, the up-stream (VI) winds being the ones that would produce the greatest waves.

Slope observations consisted in a number of readings of gauges on each bank approximately one-half mile above and below the sections, each section having its own set of slope gauges. The gauges were graduated to tenths of a foot and read by estimation to hundredths of a foot. Ten readings of each gauge were usually taken at three-minute intervals, 5 being taken simultaneously on the two upper gauges, then 10 on the two lower gauges, and, finally, 5 more on the upper gauges. All readings were reduced to the same datum and differences of reduced readings gave the fall of water-surface between the gauges. The distances of some of the gauges from the section have not been given in the notes. In these cases the distances have been assumed as one-half mile, on the supposition that the gauges were set in accordance with the instructions governing the work. The locations of the gauges as given, or assumed, are shown on the sketch of the locality. The fall divided by the distances between the gauges gave the sine of the inclination of the water-surface, this quantity being computed separately for each bank. The slope has been computed to seven plans of decimals, but for want of space in the tabulation the first three places have been given at the head of the column.

The total fall from Mhoon's Landing, 30.5 miles above Helena, to Helena has been computed from the gauge-readings for the entire period of discharge observations at Helena. When the results are plotted as abscissas to gauge heights at Helena as ordinates, it is shown that the total fall between these places, for stages when the river is entirely within its banks, decreases as the stage at Helena increases. In other words, the fall from Mhoon's Landing to Helena and gauge heights at Helena appear to be decreasing functions of each other.

In the remarks accompanying the tabulation, three results have been marked as rejected from notes made by the observer. On a number of other dates the observer has noted high waves, and it would probably improve the series of observations to reject those results also; at least the mean velocity and discharge. In addition, all observations prior to October 11 should be rejected for several reasons. On October 11 the lead line was tested and found to have shrunk 3 feet in 50, and no data exists for determining what the error was on previous days. The discrepancies in the measured velocities, however, are very great prior to October 10, and are beyond any possible variations which could have taken place in the current itself, or that could arise from the different methods employed.

Accompanying this report is a plate on which are plotted the mean velocities, areas, and discharges of the high-water section as abscissas to gauge heights as ordinates,

the scale for each system of co-ordinates being given on the plate. The discharges of the low-water section are also plotted, but not the mean velocities and areas. Doubtful results are not plotted. The gauge-readings and datum areas of both sections have been plotted in chronological order, there having been added to the datum areas of the low-water section 80,000 square feet to make them approximately coincide with datum areas of the high-water section. The high-water section, as sounded on January 29, 1885, is also shown on the plate, the horizontal scale being 500 feet to the inch. The positions of the water-surfaces on the following dates are also shown: December 26, 1872, March 8, 1882, January 29, 1885, and March 4, 1885. The zero of the standard gauge coincides with the water-surface on December 26, 1872, and all gauge-readings in this series of observations refer to this zero. The water-surface on March 8, 1882, by one authority, is the highest known; but the regular gauge record gives the reading on March 9, 1882, as one-tenth foot higher. The dotted bottom line gives the section as sounded on March 4, 1885, and shows where the fill took place which occurred between January 29, 1885, and that date.

The gauge-readings, areas, datum areas, mean velocities, and discharges for both sections have also been plotted in chronological order on another plate for purposes of inspection and study. The scale is too large to admit of reproduction of the plate. When plotted in this manner the results, with few exceptions, follow each other in remarkable agreement, and clearly show the high grade and precision of the work done at this station.

In making the reductions nearly all the gentlemen employed in the computing division have at various times taken part. On account of the large reduction in force and of making this work secondary to other work, the completion of it has been long delayed. Throughout the entire work the greatest care has been taken to eliminate from the results all errors of computation. Wherever it was possible to obtain independent checks on the results they were applied, and where no checks could be obtained the work was gone over a second time. The computing machine has been largely used in the work, and has given good satisfaction.

Very respectfully, your obedient servant,

L. L. WHEELER,
In charge Computing Division.

Capt. THOMAS TURTLE,
Corps of Engineers, U. S. A.,
Secretary Mississippi River Commission.

Discharge observations at Helena, Ark.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination.		Method.	Remarks.
			Area.		Depth.											
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.						Right bank.	Left bank.		
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cubic ft.*					
Oct. 1	10.20															
2	11.84	+1.64														
3	14.41	+2.24	81,196	236,397	17.7	48.7	54.0	4,590								
4	16.25	+1.97	93,090	239,721	20.2	49.4	57.0	4,604	+3,324	2.762	257,085	Calm			R. F.	
5	17.79	+1.74														
6	19.00	+1.26	107,649	241,605	23.2	49.8	60.0	4,634	+1,884	2.775	298,725	VI, light			R. F.	
7	19.94	+0.89														
8	20.21	+0.27	114,418	242,738	24.6	50.0	62.0	4,644	+1,133	3.697	423,011	VII, strong			Meter.	
9	20.00	−0.26	112,026	241,343	24.1	49.8	62.0	4,644	−1,395	2.773	310,614	XII, mod			R. F.	
10	19.50	−0.44	108,973	240,579	23.5	49.6	64.5	4,635	− 764	3.636	396,177	Calm			Meter.	
11	19.00	−0.51	102,952	236,800	22.2	48.8	61.0	4,628	−3,779	3.771	388,198	X, gentle			Meter.	
12	18.49	−0.51														
13	17.98	−0.46	97,080	235,750	21.0	48.6	59.0	4,624	−1,050	3.781	367,018	I, gentle			Meter.	
14	17.80	−0.37	97,020	237,361	21.2	48.9	61.4	4,616	+1,611	3.806	372,711	I, mod			Meter.	
15	17.50	−0.15	98,491	239,352	21.4	49.3	59.1	4,613	+1,991	3.699	364,290	I, gentle			Meter.	
16	17.62	+0.16	98,334	238,604	21.3	49.2	59.6	4,614	− 748	3.607	354,725	V, light			Meter.	
17	18.03	+0.31	100,104	238,547	21.6	49.2	59.5	4,623	− 57	3.924	392,804	I, gentle			Meter.	Reject.
18	18.30	+0.30	97,934	235,120	21.2	48.5	58.6	4,625	−3,427	3.638	356,274	II, light			Meter.	
19	18.41	+0.13														
20	18.45	+0.04	100,256	236,731	21.7	48.8	59.6	4,625	+1,611	3.729	373,818	IV, light			Meter.	
21	18.37	−0.10	99,994	236,848	21.6	48.8	59.5	4,626	+ 117	3.688	368,768	IV, light			Meter.	
22	18.24	−0.19	99,808	236,778	21.5	48.8	60.0	4,624	− 70	3.733	370,713	XII, mod			Meter.	
23	17.80	−0.43	97,376	236,886	21.1	48.8	58.5	4,621	+ 108	3.552	345,865	I, strong			Meter.	High waves.
24	17.30	−0.43														
25	16.90	−0.40	93,771	237,448	20.0	48.9	59.4	4,613	+ 562	3.814	357,629	II, light			Meter.	
26	16.54	−0.36														
27	16.28	−0.26	89,649	236,211	19.4	48.7	59.2	4,609	−1,237	3.725	333,961	XII, light			Meter.	
28	16.04	−0.25	88,247	235,944	19.2	48.6	59.0	4,607	− 267	3.854	340,108	XII, light			Meter.	
29	16.10	+0.06	87,189	234,553	18.9	48.4	58.9	4,606	−1,391	3.842	334,941	XII, light			Meter.	
30	16.23	+0.15	88,446	235,245	19.2	48.5	59.4	4,608	+ 692	3.770	333,438	XII, light			Meter.	
31	16.35	+0.11	87,821	234,052	19.0	48.2	59.4	4,610	−1,193	3.854	338,482	I, light			Meter.	
Nov. 1	16.34	−0.01	88,933	235,211	19.3	48.5	57.4	4,610	+1,159	3.740	332,602	V, light	.000 .0750	.000 .0728		
2	16.17	−0.17														
3	15.98	−0.20	87,128	235,107	18.9	48.5	57.9	4,609	− 104	3.767	328,212	V, light	.0626	.0729		
4	15.80	−0.17	86,253	235,062	18.7	48.5	58.0	4,607	− 45	3.819	329,422	XI, mod				

5	15.53	−0.22	85,907	235,950	18.6	48.6	57.0	4,606	+ 888	3.669	316,873	XII, light	.....	.....	.....	
6	15.15	−0.44	84,571	236,371	18.4	48.7	57.5	4,597	+ 421	3.830	323,873	XII, light	.....	.....	.....	
7	14.78	−0.39	82,794	236,296	18.0	48.7	56.8	4,594	− 76	3.714	307,545	VI, light	.....	.....	.....	
8	14.30	−0.56	79,735	235,900	17.4	48.6	56.5	4,588	− 895	3.704	296,330	VI, light	.....	.....	.....	
9	13.65	−0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	13.14	−0.55	75,495	236,509	16.5	48.8	55.5	4,569	+ 609	3.750	283,109	VI, light	.....	.....	.....	
11	12.63	−0.47	75,155	238,490	16.5	49.2	57.0	4,557	+1,981	3.753	282,080	V, light	.....	.....	.....	
12	12.12	−0.52	72,241	237,906	15.9	49.0	53.0	4,555	− 584	3.694	266,844	XII, light	.....	.....	.....	
13	11.75	−0.40	68,335	235,671	15.0	48.6	54.0	4,543	−2,235	3.786	255,318	XII, light	.....	.....	.....	
14	11.30	−0.44	66,800	236,284	14.7	48.7	52.5	4,541	+ 613	3.720	248,861	XII, light	.0595	.0729	.....	
15	11.00	−0.30	64,176	234,928	14.1	48.4	52.0	4,536	−1,356	3.686	236,537	V, light	.....	.....	.....	
16	10.61	−0.36	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	10.27	−0.35	61,257	235,324	13.5	48.5	53.3	4,528	+ 396	3.745	229,433	V, light	.....	.....	.....	
18	9.99	−0.27	60,316	235,639	13.3	48.6	53.0	4,521	+ 315	3.717	224,220	X, light	.....	.....	.....	
19	9.86	−0.13	58,414	234,330	12.9	48.3	53.2	4,519	−1,309	3.755	219,318	XII, light	(1).0551	(1).0549	.....	
20	9.69	−0.17	56,968	234,098	12.6	48.3	53.5	4,516	− 232	3.603	205,276	IV, light	.....	.....	.....	Reject discharge.
21	9.59	−0.08	54,746	234,456	16.8	48.3	52.5	3,260	+ 358	3.800	208,034	V, light	.....	.....	.....	Bar cuts off width.
22	9.53	−0.09	54,309	234,214	16.7	48.3	52.0	3,260	− 242	3.894	211,500	IV, strong	.....	.....	.....	High waves and winds.
23	9.56	+0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	9.39	−0.16	54,088	234,450	16.6	48.3	52.0	3,260	+ 296	3.815	206,338	VI, light	.....	.....	.....	
25	9.34	−0.08	54,528	235,053	16.7	48.5	53.0	3,259	+ 603	3.859	210,411	VI, gentle	.....	.....	.....	High waves.
26	9.10	−0.23	53,448	234,755	17.2	48.4	52.5	3,110	− 298	3.757	200,805	IV, light	.....	.....	.....	
27	8.90	−0.19	66,492	159,712	18.7	36.8	25.0	3,554	.....	2.949	196,077	V, gentle	.....	.....	.....	Low-water section.
28	8.88	−0.03	65,468	158,761	18.4	36.6	25.0	3,555	− 951	3.171	207,601	X, gentle	.....	.....	.....	
29	9.08	+0.22	65,544	158,110	18.4	36.4	25.0	3,556	− 651	3.120	204,516	V, light	.....	.....	.....	
30	9.75	+0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dec. 1	10.48	+0.74	70,828	158,361	19.6	36.5	25.1	3,611	+ 251	3.078	217,991	IV, light	.000	.000	.....	
2	10.85	+0.37	71,753	157,965	19.7	36.4	26.5	3,638	− 396	3.090	221,683	II, light	.0671	.0909	.....	
3	10.95	+0.10	71,534	157,375	19.7	36.3	26.0	3,638	− 590	3.139	224,584	V, light	.....	.....	.....	
4	10.85	−0.10	71,525	157,727	19.7	36.4	26.0	3,632	+ 352	3.063	219,111	V, light	.....	.....	.....	
4	10.83	.....	63,876	235,400	14.1	48.5	53.0	4,535	+ 645	3.825	244,331	V, strong	.....	.....	.....	High-water section; high waves.
5	10.64	−0.21	70,539	157,495	19.5	36.3	26.0	3,618	− 232	3.074	216,827	V, light	.....	.....	.....	Low-water section.
6	10.30	−0.38	69,521	157,714	19.3	36.4	26.0	3,608	+ 219	3.258	226,476	V, mod	.....	.....	.....	High waves.
7	9.72	−0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	8.97	−0.75	64,655	157,659	18.1	36.3	25.0	3,571	− 55	2.909	188,103	I, light	.....	.....	.....	
9	8.37	−0.63	63,078	158,240	17.7	36.5	24.0	3,558	+ 581	2.847	179,607	I, light	.....	.....	.....	
9	8.30	.....	50,250	236,725	15.8	48.8	51.0	3,190	+1,325	3.592	180,494	XII, light	.....	.....	.....	High-water section.
10	7.86	−0.48	61,355	158,345	17.3	36.5	23.0	3,547	+ 105	2.824	173,191	V, light	.....	.....	.....	Low-water section.
11	7.50	−0.37	59,911	158,147	17.0	36.5	23.0	3,521	− 198	2.832	169,656	Calm	.....	.....	.....	
12	7.25	−0.23	58,963	158,117	16.8	36.4	23.0	3,520	− 30	2.869	169,158	XI, light	.....	.....	.....	
13	7.17	−0.08	58,701	158,134	16.7	36.5	22.0	3,517	+ 17	2.875	168,754	XI, light	.0682	.....	.....	
14	7.78	+0.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	8.52	+0.90	63,467	158,112	17.8	36.4	23.5	3,567	− 22	3.038	192,794	IX, light	.....	.....	.....	
16	9.80	+1.21	67,742	157,759	18.8	36.4	25.0	3,598	− 353	3.159	213,969	V, gentle	.0822	.0920	.....	High waves.
17	10.89	+1.08	71,940	158,003	19.8	36.4	27.0	3,638	+ 244	3.147	226,402	XI, light	.....	.....	.....	
18	12.11	+1.13	76,482	158,074	20.7	36.4	27.5	3,688	+ 71	3.245	248,203	XI, gentle	.....	.....	.....	
19	13.25	+1.15	80,506	157,864	21.6	36.4	28.5	3,735	− 210	3.274	263,560	XII, gentle	.....	.....	.....	
20	14.14	+0.94	83,507	157,504	22.1	36.3	29.5	3,774	− 360	3.277	273,619	IV, light	.....	.....	.....	
21	14.89	+0.67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Discharge observations at Helena, Ark.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination.		Method.	Remarks.
			Area.		Depth.											
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.						Right bank.	Left bank.		
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cubic ft.*					
Dec. 22	15.22	+0.37	88,346	158,149	23.2	36.5	31.0	3,811	+ 645	3.351	296,071	XI, gentle				
23	15.24	0.00	87,272	156,986	22.9	36.2	31.0	3,808	—1,163	3.348	292,210	XII, light				
24	14.84	—0.41	86,306	157,608	22.7	36.3	30.6	3,806	+ 622							
25	13.96	—0.86														
26	12.93	—0.98														
27	12.13	—0.85														
28	12.15	+0.02														
29	12.95	+0.80														
30	15.11	+1.93	86,994	157,221	22.9	36.2	29.9	3,806	— 387	3.493	303,898	IV, light				
31	17.56	+2.89	97,850	158,471	24.9	36.5	32.5	3,931	+1,250	3.717	363,707	XI, light	.0837	.1015		
1885.																
Jan. 1	20.68	+2.97	110,220	158,131	26.4	36.5	35.5	4,173	— 340	3.884	428,052	XI, gentle	.000	.000		
2	24.04	+3.15	124,968	158,780	29.6	36.6	40.0	4,221	+ 649	4.111	513,756	II, light				
3	26.90	+3.02	137,010	158,657	32.2	36.6	43.5	4,253	— 123	4.418	605,356	II, light				
4	29.15	+2.24														
5	30.59	+1.44														
6	31.55	+0.96														
7	31.94	+0.41	155,039	155,039	35.7	35.7	47.0	4,338	—3,618	4.598	712,894	V, light				Chute discharge = 3,539 cubic feet not included.
7	32.00		163,585	236,498	34.3	48.8	76.0	4,774	— 227	4.217	689,860	V, light				High-water section.
8	32.20	+0.30	162,704	234,680	34.0	48.4	76.0	4,779	—1,818	4.387	713,732	VI, mod				High waves.
9	32.49	+0.25	164,613	235,201	34.4	48.5	75.2	4,781	+ 521	4.297	707,260	VII, light				
10	32.78	+0.28	166,774	235,973	34.9	48.6	75.0	4,783	+ 772	4.244	707,810	III, light				
11	33.11	+0.32														
12	33.65	+0.59	170,707	235,771	35.6	48.6	76.5	4,800	— 202	4.415	753,708	XI, light				
13	34.40	+0.64	174,877	236,360	36.4	48.7	77.6	4,805	+ 589	4.468	781,352	XI, light				
14	35.02	+0.68	177,319	235,807	36.8	48.6	78.6	4,820	— 553	4.467	792,019	IV, light				
15	35.82	+0.80														
16	36.48	+0.66												.0938		
17	36.88	+0.40	185,968	235,490	38.5	48.5	79.0	4,829	— 317	4.443	826,367	XI, light				
18	37.25	+0.37														
19	37.62	+0.37	188,788	234,715	39.1	48.4	79.5	4,831	— 775	4.503	850,195	I, light				
20	37.97	+0.36	189,491	233,727	39.2	48.2	81.5	4,831	— 988	4.005	872,599	I, light				
21	38.32	+0.34	192,291	234,836	39.8	48.4	82.2	4,831	+1,109	4.714	906,526	XI, light				

22	38.69	+0.37	195,007	235,765	40.4	48.6	82.2	4,831	+ 929	4.710	918,483	II, light				
23	39.13	+0.44														
24	39.48	+0.35											.0909	.0900		
25	39.82	+0.34														
26	40.10	+0.27	201,371	235,322	41.6	48.5	83.5	4,841	— 443	4.818	970,175	IX, light				
27	40.36	+0.27	204,693	237,388	42.2	48.9	83.5	4,850	+2,066	4.822	987,063	VII, mod				High waves.
28	40.48	+0.12	205,619	237,732	42.4	49.0	83.5	4,851	+ 344	4.964	1,020,743	XII, light				
29	40.62	+0.14	206,060	237,494	42.5	49.0	80.5	4,851	— 238	4.907	1,013,129	II, light	.0902	.1028		
30	40.62	—0.01														
31	40.49	—0.12														
Feb. 1	39.74	—0.75											.000	.000		
2	38.54	—1.22	193,687	235,205	40.0	48.5	80.0	4,844	—2,289	4.538	878,985	V, light				
3	36.80	—1.68	185,169	235,107	38.3	48.5	79.0	4,836	— 98	4.405	815,765	VII, light	.0896	.1051		
4	34.86	—1.99	176,032	235,310	36.6	48.5	78.0	4,816	+ 203	4.125	726,081	IX, light				
5	32.74	—2.12	163,629	233,005	34.3	48.0	78.0	4,778	—2,305	4.201	687,408	IX, gentle				
6	30.94	—1.78	156,238	234,223	32.8	48.3	74.0	4,766	+1,218	3.979	621,748	VI, light	.0858	(†).0388		
7	29.15	—1.63	148,849	235,282	31.4	48.5	72.0	4,739	+1,059	4.200	625,236	VI, gentle				High waves.
8	27.92	—1.40														
9	27.02	—0.90	136,682	233,124	29.0	48.1	68.0	4,709	—2,158	4.073	556,640	X, strong				High waves.
10	26.62	—0.40	134,802	233,142	28.6	48.1	69.0	4,707	+ 18	4.045	545,224	X, light				
11	26.54	—0.08	134,907	233,629	28.7	48.2	70.0	4,707	+ 487	3.997	539,293	IV, light	(†).1111	.0814		
12	26.66	+0.12	136,973	235,121	29.1	48.5	70.0	4,707	+1,492	4.033	552,392	IV, light				
13	26.86	+0.22	136,981	234,174	29.1	48.3	70.0	4,708	— 947	4.037	533,044	I, light				
14	27.01	+0.14	135,659	232,176	28.8	47.9	69.0	4,714	—1,998	3.984	540,506	VI, light	.0852	.0890		
15	27.36	+0.34														
16	27.98	+0.62														
17	28.65	+0.67														
18	29.34	+0.69														
19	29.53	+0.18	146,355	230,988	30.9	47.6	72.0	4,743	—1,188	4.110	601,475	II, light	.0833	.0909		
20	29.38	—0.16	144,977	230,329	30.6	47.5	71.0	4,743	— 659	4.129	598,605	II, light				
21	28.48	—0.78														
22	27.47	—1.11														
23	26.04	—1.43														
24	24.52	—1.52														
25	22.70	—1.82														
26	21.18	—1.52														
27	19.44	—1.74														
28	18.35	—1.07	90,885	227,790	19.7	47.0	58.0	4,621	—2,539	3.975	361,275	VI, gentle		.0758		Rough.
Mar. 1	17.46	—0.91											.000	.000		
2	16.83	—0.65	84,368	228,305	18.3	47.1	57.0	4,607	+ 515	3.954	333,598	II, light	.0962	.0701		
3	16.50	—0.31	83,076	228,573	18.0	47.1	56.0	4,606	+ 268	3.949	328,063	VI, light				
4	16.52	+0.02	83,816	229,219	18.2	47.3	54.0	4,606	+ 646	4.004	335,578	I, gentle				
5	16.83	+0.32	84,942	228,879	18.4	47.2	55.0	4,612	— 340	3.966	336,915	I, light	.1011	.0724		
6	17.42	+0.64	87,861	229,008	19.0	47.2	54.0	4,616	+ 129	4.043	355,231	X, light				
7	18.27	+0.89	91,505	228,833	19.8	47.2	57.0	4,625	— 175	4.046	370,255	XI, gentle				
8	19.32	+0.94														
9	20.38	+1.17	101,205	228,738	21.8	47.2	57.0	4,645	— 95	4.184	423,432	VI, gentle	(†).0623	(†).1519		
10	21.86	+1.53	107,613	228,213	23.1	47.0	59.0	4,655	— 525	4.249	457,225	VI, light		.0758		
11	23.72	+1.76	116,268	228,146	24.9	47.0	60.5	4,670	— 67	4.221	490,744	V, light				
12	25.81	+2.02	127,219	229,341	27.1	47.3	63.0	4,695	+1,195	4.491	571,388	VI, strong				High waves. Reject.
13	27.84	+1.80	135,692	229,753	28.7	47.4	64.4	4,725	+ 412	4.256	577,503	XI, light				

Discharge observations at Helena, Ark.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination.		Method.	Remarks.
			Area.		Depth.											
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean. datum.	Maximum.						Right bank.	Left bank.		
1885.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cubic ft.*					
Mar. 14	28.70	+1.16	142,354	230,956	30.0	47.6	64.7	4,741	+1,208	4.491	630,758	VII, light	.0975	.1402		
15	29.45	+0.69														
16	29.98	+0.57	148,884	231,379	31.4	47.7	67.3	4,747	+ 423	4.327	644,278	V, light	.0919	.0947		
17	30.72	+0.76	153,733	232,727	32.3	48.0	67.6	4,757	+1,348	4.338	666,833	XII, light				
18	31.57	+0.88	157,328	232,283	33.0	47.9	67.6	4,767	− 444	4.426	696,322	VIII, light				
19	32.37	+0.76	161,120	232,261	33.7	47.9	69.5	4,775	− 22	4.452	717,361	X, gentle	.0814	.0871		
20	33.11	+0.20	164,655	232,280	34.4	47.9	70.0	4,787	+ 19	4.473	736,516	XII, light				
21	33.57	+0.95														
22	33.68	+0.11														
23	33.57	−0.11	167,211	232,668	34.8	48.0	72.0	4,802	+ 388	4.411	737,616	II, light	.0833	.0909		
24	33.45	−0.11	166,963	232,999	34.8	48.0	71.0	4,801	+ 331	4.338	724,222	VI, light				
25	33.23	−0.23	164,995	232,078	34.4	47.8	70.0	4,798	− 921	4.220	696,316	II, light				
26	32.86	−0.35	163,380	232,210	34.1	47.9	70.5	4,787	+ 132	4.247	693,922	VI, light	.0786	.0875		
27	32.34	−0.50	161,700	232,977	33.9	48.0	69.0	4,773	+ 767	4.210	680,798	VI, light				
28	31.53	−0.74	158,781	233,929	33.3	48.2	70.0	4,767	+ 952	4.173	662,562	XII, gentle.				
29	30.81	−0.93														
30	29.55	−1.16	147,848	232,374	31.2	47.9	69.0	4,741	−1,555	4.151	613,794	VI, gentle				
31	28.31	−1.27	142,020	232,419	30.0	47.9	66.0	4,729	+ 45	3.941	559,656	V, light	.0852	.0932		
Apr. 1	26.91	−1.37	134,607	231,602	28.6	47.7	65.0	4,712	− 817	3.979	535,563	V, light	.000	.000		
2	25.65	−1.29	129,594	232,465	27.6	47.9	64.0	4,691	+ 863	3.963	516,119	VI, gentle				
3	24.68	−0.96	124,857	232,245	26.7	47.9	62.6	4,679	− 220	4.039	504,254	XI, gentle				
4	23.88	−0.76	119,685	230,801	25.6	47.6	63.4	4,669	−1,444	3.856	461,514	XII, light				
5	23.31	−0.59														
6	22.98	−0.33														
7	23.06	+0.06	115,485	230,505	24.7	47.5	63.3	4,669	− 296	3.919	452,556	VII, light				
8	23.60	+0.56														
9	24.70	+1.16	124,013	230,354	26.5	47.5	65.2	4,684	− 151	4.154	515,169	V, light	.0941	.0994		
10	26.25	+1.46	130,842	230,907	27.8	47.6	65.4	4,700	+ 553	4.140	541,611	II, light				

(c) ARKANSAS CITY, ARKANSAS.

SAINT LOUIS, *April* 13, 1887.

CAPTAIN: I have the honor to submit the following report upon the final reduction of discharge observations made on the Mississippi River at Arkansas City, Ark., between September 29, 1884, and April 9, 1885.

The party at this station was under the direction of Assistant Engineer G. W. Wood. Mr. E. E. Wall acted as recorder throughout the season. A steam engineer and two boatmen completed the party.

Observations were made upon a section about one-half mile below Arkansas City. The ends of the section were marked by range signals and along the left bank a series of signals at right angles to the section were set to locate positions on the section by means of a sextant set at the constant angle 14° 02′. (For further explanation of this method of location, see report of Mississippi River Commission for 1883, p. 181.)

The instruments in use at this station consisted of Price meters B, No. 7 and No. 13, a Morse register, a break-circuit clock, electric batteries, transit, level, sextant, sounding lines, etc. (The instruments and manner of using them were similar to those at Helena, which have already been described in my report upon the reduction of work at that station.)

Meter No. 7 was used from the commencement of operations until January 24, 1885, when it was lost. Four series of observations were made by Mr. Wood for determining the coefficients of this meter, but the results of all of them have been rejected on account of the small range in velocities and the large errors of observation. A series of observations for the same purpose were made by Capt. Smith S. Leach, January 8, 1885, in running water, the results of which have been adopted for reducing all observations made with this meter. The following table contains the results of the several series of observations for determining the coefficients of this meter:

Date.	No. of observations.	a	b	e_0	e_a	e_b
October 21, 1884*	14	+3.864	−0.041	±0.085	±0.118	±0.087
November 3, 1884*	21	+3.572	+0.478	±0.202	±0.153	±0.153
November 12, 1884*	21	+3.737	+0.376	±0.171	±0.120	±0.115
December 4, 1884*	15	+4.084	−0.050	±0.129	±0.103	±0.097
January 8, 1885†	20	+3.770	+0.520	±0.099	±0.022	.....

* Taken in still water. † Taken in running water.

Meter B was used from January 31 to February 12, inclusive. No observations were made for determining its coefficients, but three series of observations had been made by Capt. Smith S. Leach and Assistant L. C. Jones, early in January, and the means of the results obtained from these three series were adopted for reducing observations made with this meter. These same values were used in reducing observations made with this meter at Red River Landing, and the results of the several series of observations are given in my report upon the reduction of work at that station. The adopted values for this meter are,

$$y + 1.783\,x + 0.239$$

Meter No. 13 was used from February 13 to the end of the season. Three series of observations for determining the coefficients of this meter were made, one by Mr. Bowen, at Carrollton, and two by Mr. Wood. The results are given in the following table:

Date.	No. of observations.	a	b	e_0	e_a	e_b
February 4, 1885*	6	+3.882	+0.318	±0.043	±0.018	±0.029
February 18, 1885†	26	+3.912	+0.347	±0.115	±0.023	.....
March 20, 1885†	22	+3.942	+0.219	±0.136	±0.031	.....

* Taken in still water. † Taken in running water.

NOTE.—In the rating taken by Mr. Bowen, February 4, 1885, an apparatus was used by means of which the observations were both made and recorded automatically. This rating is a fine example of observations well made and also properly arranged to give great weight to the results. The ratings of February 18 and March 20, and also that of Meter No. 7, taken January 8, are good examples of ratings made in running water, and are a proof of the value of this method of rating current meters.

The mean values of a and b were adopted for reducing observations made with this meter, making the equation for this meter,

$$y = +3.912\,x + 0.295$$

The preceding values for the several meters have been used throughout the entire series of observations. The counting of registrations of the meter had been done in the field and the results were adopted in the office reduction. The launch was not anchored while measuring velocities at this station. Prior to October 12 observations for velocity were made with the meter at not more than 12 feet beneath the surface. No coefficients have been applied to these velocities to reduce them to six-tenths depth velocities. Subsequent to October 12 all observations for velocity were made at six-tenths the depth from the surface. Velocities were measured at points on the cross-section approximately 160 feet apart. The computation of velocities was made by means of tables prepared for the purpose, except those measured by Meter B, where the velocities were computed directly by means of the equation.

Prior to December 1 the note is quite frequently made that while the velocity was being measured the launch drifted laterally by amounts varying from 10 to 100 feet. If we let—

l = lateral movement in feet,

t = time in seconds,

y = measured velocity, and

c = correction to be applied to y on account of lateral movement, then,

$$c = y - \frac{\sqrt{t^2 y^2 - l^2}}{t} = \frac{l^2}{2\,t^2\,y} + \frac{l^4}{6\,t^4\,y^3} + \text{etc.}$$

As $t^2\,y$ largely exceeds l^2 this series converges rapidly, and the first term will usually give the correction with the desired accuracy. At Arkansas City t is usually 120 seconds, and the formula becomes

$$= \frac{1}{28800}\,\frac{l^2}{y} + \frac{1}{1244160000}\,\frac{l^4}{y^3} + \text{etc.}$$

The maximum value of c that would be obtained by using this formula would be 9 per cent. of the measured velocity, but commonly the value of c would be less than 1 per cent. of the measured velocity. The effect of this correction on the mean velocity for any date would probably not exceed 1 per cent. The correction has not been applied.

The next step in the reduction was to correct the soundings for errors of lead line. The lead-line corrections were usually determined once each week, but on some occasions large changes took place in the lead line with no means of determining just when the changes occurred. It was assumed, however, that the line changed proportionally to the time, and soundings on intermediate dates were corrected on this assumption. It is impossible to estimate what errors may have been introduced by this manner of correcting the soundings.

The cross-sections were then plotted on a horizontal scale of 1 inch = 400 feet and a vertical scale of 1 inch = 10 feet. Depths were then scaled off at intervals of 80 feet and used in computing the partial areas, which were computed and checked in the manner described in my report upon the reduction of work at Helena.

Velocities were also plotted on the same sheets with the cross-sections with the same horizontal scale and a vertical scale of 1 inch = 1 foot per second. The transverse curves of velocity were then drawn and velocities scaled from the curves at points 160 feet apart, to be used with the partial areas in computing the partial discharges. The plotting of cross-sections and velocity curves, the scaling of depths and velocities, the multiplication of partial areas by velocities, and the summation of partial discharges have all been checked by a second computer going over the same work.

The clock used at this station had a large rate during the latter part of the season, and it became necessary to correct the results on this account. These corrections were applied directly to the total discharges instead of to each individual velocity.

The results of the computation were then copied into the tabulation accompanying this report. The gauge readings for days on which areas were measured were taken from the observers' notes and correspond to the mean time of observations. Prior to October 18, however, the observer did not read the gauge, and the readings for dates prior to October 18 have been taken from the regular gauge record at this station. The readings given for other days are the means of daily readings and correspond to 12 m. The gauge read was the standard gauge at Arkansas City, the zero of which is 116.35 feet above Cairo Datum Plane. Mr. Wood, however, states that the gauge is inclined to such an extent as to materially change this value. The results of his

leveling substantiates his statement. The rise or fall in twenty-four hours for any date is the difference between the mean gauge readings for that date and the preceding one.

The computation of datum areas has been made in the following manner: Datum was assumed to correspond to the gauge reading 41.73 feet, observed January 31, 1885. Datum width was taken as 3,380 feet. The slope of the bank was assumed to be uniform below 10 feet on the gauge, between 10 and 20 feet, between 20 and 30 feet, and between 30 and 41.73 feet. The width at 10 feet was taken as 3,220 feet, at 20 feet as 3,300 feet, and at 30 feet as 3,350 feet. Datum areas have then been computed by the following formulæ, in which h represents gauge reading and w observed width.

Between 30 and 41.73 feet on gauge—

$$\text{Datum area} = (41.73 - h)\frac{3380 + w}{2} + \text{water area.}$$

Between 20 and 30 feet on gauge—

$$\text{Datum area} = (41.73 - 30)\frac{3380 + 3350}{2} + (30 - h)\frac{3350 + w}{2} + \text{w. area.}$$

$$= 39471 + (30 - h)\frac{3350 + w}{2} + \text{water area.}$$

Between 10 and 20 feet on gauge—

$$\text{Dat. ar.} = 39471 + (30 - 20)\frac{3350 + 3300}{2} + (20 - h)\frac{3300 + w}{2} + \text{w. area.}$$

$$= 72721 + (20 - h)\frac{3300 + w}{2} + \text{water area.}$$

Below 10 feet on gauge—

$$\text{Dat. ar.} = 72721 + (20 - 10)\frac{3300 + 3220}{2} + (10 - h)\frac{3220 + w}{2} + \text{w. ar.}$$

$$= 105321 + (10 - h)\frac{3220 + w}{2} + \text{water area.}$$

Mean depth has been obtained by dividing the observed area by the observed width Mean datum depth has been obtained by dividing the datum area by the datum width Maximum depth has been taken directly from the corrected soundings. Scour or fill has been obtained by taking differences of datum areas. Scour has been indicated by the positive sign. Mean velocity has been obtained by dividing the discharge by the area.

The direction of the wind is given in the notes with reference to the banks and the current. In the tabulation it has been given with reference to the points of the compass. The force of the wind is not well defined and is given in the tabulation as contained in the notes.

A number of slope observations were made by reading gauges on each bank approximately one half mile above and below the section, but the results have been rejected on account of large discrepancies.

Accompanying this report is a plate on which are plotted the mean velocities, areas and discharges as abscissas to gauge heights as ordinates. The gauge-readings and datum areas have been plotted on the plate in chronological order. The section as sounded January 31, 1885, is also shown on the plate. The gauge-readings, areas, datum areas, mean velocities, and discharges have also been plotted in chronological order on another plate for purposes of inspection and study. The scale is too large to admit of reproduction of the plate.

Very respectfully, your obedient servant,

L. L. WHEELER,
In charge Computing Division.

Capt. SMITH S. LEACH,
Corps of Engineers, U. S. Army,
Secretary Mississippi River Commission.

Discharge observations at Arkansas City, Ark.

Date.	Gauge.		Dimensions of cross section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Oct. 1	7.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	8.70	+0.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	10.40	+1.70	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	12.50	+2.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	14.80	+2.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6*	16.60	+1.80	139,391	223,301	42.5	66.1	80.0	3,282	.....	3.263	454,778	
7*	18.05	+1.45	145,106	224,247	44.2	66.3	82.0	3,285	+ 946	3.344	485,275	
8*	19.25	+1.20	153,954	229,149	46.7	67.8	82.5	3,298	+4,902	3.472	534,514	
9*	20.00	+0.75	149,885	222,606	45.4	65.9	84.5	3,302	—6,543	3.594	538,721	
10*	20.60	+0.60	159,929	230,664	48.4	68.2	84.0	3,302	+8,058	3.449	551,566	
11	21.00	+0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	20.65	—0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	20.15	—0.50	153,144	225,370	46.4	66.7	82.0	3,299	—5,294	3.149	482,228	
14	19.50	—0.65	150,089	224,460	45.5	66.4	82.0	3,299	— 910	2.977	446,854	W.
15	18.85	—0.65	145,259	221,772	44.1	65.6	81.5	3,295	—2,688	2.915	423,418	Calm.
16	18.40	—0.45	143,698	221,695	43.6	65.6	81.0	3,295	— 77	2.826	406,063	Do.
17	18.15	—0.25	143,583	222,404	43.6	65.8	80.0	3,295	+ 709	2.972	426,741	
18	18.10	—0.05	144,477	223,463	43.8	66.1	81.0	3,295	+1,059	2.863	413,667	Do.
19	18.25	+0.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	18.47	+0.05	144,501	222,268	43.8	65.8	81.0	3,296	—1,195	2.806	405,416	NE., light.
21	18.50	0.00	144,034	221,702	43.7	65.6	81.5	3,296	— 566	2.907	418,640	SE., light.
22	18.42	0.00	143,372	221,304	43.5	65.5	80.5	3,295	— 398	2.890	414,295	
23	18.20	—0.20	141,900	220,556	43.1	65.3	79.5	3,295	— 748	2.943	417,592	W., strong.
24	17.95	—0.25	139,656	219,137	42.4	64.8	81.0	3,295	—1,419	2.823	394,222	E., light.
25	17.55	—0.35	138,468	219,257	42.1	64.9	81.0	3,286	+ 120	2.710	375,263	
26	17.10	—0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	16.75	—0.45	135,446	218,861	41.3	64.8	77.0	3,281	— 396	2.773	375,631	Calm.
28	16.43	—0.40	133,525	217,990	40.7	64.5	77.0	3,279	— 871	2.676	357,325	W., strong.
29	16.20	—0.15	131,501	216,718	40.1	64.1	77.0	3,277	—1,272	2.691	353,917	Calm.
30	16.05	—0.05	130,136	215,847	39.7	63.9	77.0	3,277	— 871	2.707	352,295	Do.
31	16.30	+0.20	132,444	217,334	40.4	64.3	78.0	3,278	+1,487	2.660	352,249	Do.
Nov. 1	16.50	+0.40	134,536	218,775	41.0	64.7	78.0	3,282	+1,441	2.723	366,394	Do.
2	16.60	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	16.40	—0.15	131,074	215,643	39.9	63.8	77.0	3,282	—3,132	2.688	352,363	Do.
4†	16.25	—0.20	130,370	215,430	39.7	63.7	77.0	3,281	— 213	2.750	358,517	NW., strong.
5	16.10	—0.10	130,578	216,126	39.8	63.9	78.0	3,278	+ 696	2.774	362,230	NW., light.
6	16.00	—0.15	130,875	216,750	39.9	64.1	77.0	3,277	+ 624	2.741	358,775	W.
7	15.70	—0.25	129,375	216,232	39.5	64.0	77.0	3,275	— 518	2.669	345,291	Calm.
8	15.20	—0.45	126,492	214,981	38.7	63.6	75.5	3,270	—1,251	2.673	338,146	Do.
9	14.65	—0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	14.00	—0.70	121,535	213,951	37.2	63.3	76.0	3,265	—1,030	2.575	312,907	Do.
11	13.35	—0.50	120,405	214,938	36.9	63.6	74.0	3,260	+ 987	2.486	299,275	Do.
12	12.75	—0.65	118,694	215,177	36.5	63.7	73.0	3,255	+ 239	2.496	296,235	Do.
13	12.25	—0.65	115,843	213,949	35.6	63.3	72.5	3,251	—1,228	2.460	284,955	Do.
14	11.70	—0.50	113,466	213,361	34.9	63.1	72.0	3,248	— 588	2.370	268,895	Do.
15	11.18	—0.45	112,829	214,413	34.8	63.4	73.0	3,245	+1,052	2.377	268,251	Do.
16	10.70	—0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	10.25	—0.40	108,334	212,859	33.6	63.0	70.0	3,224	—1,554	2.349	254,452	Do.
18	9.85	—0.40	107,053	212,851	33.8	63.0	68.5	3,165	— 8	2.270	243,034	NW., light.
19	9.50	—0.30	105,972	212,881	33.6	63.0	69.0	3,154	+ 30	2.472	261,952	Do.
20	9.25	—0.40	104,704	212,462	33.6	62.9	69.0	3,119	— 419	2.298	240,774	Calm.
21	9.05	—0.05	103,376	211,708	33.1	62.6	68.5	3,119	— 754	2.419	250,087	SE., light.
22	8.93	—0.15	103,916	212,628	33.3	62.9	68.3	3,119	+ 920	2.435	253,004	E., strong.
23	9.00	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	8.90	—0.05	103,042	211,849	33.0	62.7	68.5	3,119	— 779	2.521	259,781	Calm.
25	8.83	—0.15	103,046	212,075	33.0	62.7	69.0	3,119	+ 226	2.357	242,859	SW., light.
26	8.67	—0.10	102,466	212,002	32.9	62.7	68.5	3,118	— 73	2.399	245,850	Do.
27	8.58	—0.10	101,707	211,526	32.7	62.6	68.2	3,115	— 476	2.342	238,191	Do.
28	8.50	—0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	8.66	+0.10	101,842	211,407	32.7	62.5	68.0	3,115	— 119	2.362	240,522	
30	9.10	+0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dec. 1	9.77	+0.60	105,412	211,466	33.4	62.6	69.0	3,154	+ 59	2.454	258,684	S., light.
2	10.66	+0.80	107,216	210,427	33.2	62.3	69.5	3,229	—1,039	2.637	282,728	Calm.
3	11.38	+0.70	110,268	211,198	34.0	62.5	69.5	3,245	+ 771	2.609	287,696	Calm.
4	11.89	+0.70	111,773	211,046	34.4	62.4	70.0	3,248	— 152	2.617	292,500	S., strong.
5	12.00	+0.05	111,208	210,129	34.2	62.2	70.5	3,250	— 917	2.581	287,037	S.E., strong.
6*	11.60	—0.35	110,719	210,942	34.1	62.4	69.5	3,248	+ 813	2.894	320,386	S., very strong.
7	10.85	—0.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	

* Reject. † Water rough.

Discharge observations at Arkansas City, Ark.—Continued.

Date.	Gauge.		Dimensions of cross section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Dec. 8	10.32	—0.60	106,816	211,137	33.1	62.5	69.5	3,229	+ 195	2.434	259,964	Calm.
9	9.55	—0.70	103,542	210,297	32.8	62.2	69.0	3,154	— 840	2.431	251,696	Calm.
10	8.80	—0.70	100,404	209,528	32.2	62.0	68.0	3,119	— 769	2.465	247,521	Calm.
11*	8.22	—0.60	98,290	209,249	31.6	61.9	67.0	3,115	— 279	2.626	258,131	S., strong.
12	7.82	—0.40	96,848	209,073	31.1	61.8	66.4	3,114	— 176	2.418	234,212	W., strong.
13	7.42	—0.35	94,694	208,202	30.4	61.6	66.4	3,114	— 871	2.338	221,390	N.E., light.
14	7.50	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	8.84	+1.35	99,689	208,684	32.0	61.7	67.7	3,115	+ 482	2.438	242,997	Calm.
16	10.94	+2.15	107,009	209,306	33.1	61.9	69.2	3,229	+ 622	2.676	286,283	S.E., light.
17	12.76	+2.10	112,408	208,851	34.5	61.8	71.7	3,255	— 455	2.853	320,686	N.W., strong.
18*	15.01	+1.80	116,979	206,087	35.8	61.0	74.7	3,268	—2,764	2.883	337,316	N.W., strong.
19	16.57	+1.65	124,801	208,810	38.0	61.8	76.2	3,282	+2,723	2.925	365,023	N., light.
20	17.58	+1.00	127,399	208,089	38.8	61.6	78.6	3,286	— 721	3.059	389,672	S.S., light.
21	18.10	+0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	18.41	+0.25	131,865	209,820	40.0	62.1	77.6	3,296	+1,731	3.144	414,584	N., strong.
23	18.41	+0.10	128,318	206,283	38.9	61.0	78.1	3,296	—3,537	3.060	392,724	N., light.
24†	18.14	—0.25	128,980	207,834	39.1	61.5	78.4	3,295	+1,551	3.076	396,752	N., strong.
25	17.85	—0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	16.80	—0.80	123,438	206,689	37.6	61.2	75.8	3,381	—1,145	2.957	365,000	Calm.
27	15.85	—1.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	15.35	—0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	14.98	—0.45	117,421	206,633	35.9	61.1	73.5	3,270	— 56	2.895	339,965	E., strong.
30	16.85	+1.60	121,488	204,574	37.0	60.5	75.0	3,281	—2,059	3.093	375,724	N., strong.
31	20.28	+3.50	131,365	203,150	39.8	60.1	77.2	3,299	—1,424	3.486	457,871	N.W., strong.
1885.												
Jan. 1†	23.33	+3.35	142,439	204,104	43.1	60.4	77.7	3,305	+ 954	3.913	557,296	N.W., very strong.
2	26.13	+2.80	154,537	206,901	46.6	61.2	82.6	3,313	+2,797	4.123	637,141	N., light.
3	28.71	+2.55	162,507	206,285	48.8	61.0	87.0	3,328	— 616	4.428	719,521	Calm.
4	31.10	+2.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	32.90	+1.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	34.55	+1.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	35.55	+0.95	184,498	205,322	54.9	60.7	91.9	3,359	— 963	4.837	892,383	S., light.
8	36.30	+0.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	36.85	+0.55	194,569	211,039	57.7	62.4	96.5	3,370	+5,717	4.982	969,430	N., light.
10	37.30	+0.50	201,608	216,550	59.8	64.1	102.2	3,370	+5,520	4.863	980,502	E., light.
11	37.60	+0.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	38.10	+0.35	207,121	219,374	61.4	64.9	105.2	3,371	+2,815	4.907	1,016,372	N., light.
13	38.49	+0.45	202,053	212,990	59.9	63.0	103.4	3,371	—6,384	4.798	969,431	N., strong.
14	39.03	+0.60	202,334	211,448	60.0	62.6	101.6	3,371	—1,542	5.167	1,045,446	N.E., light.
15	39.80	+0.80	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16†	40.28	+0.55	207,854	212,748	61.7	62.9	102.6	3,371	+1,300	5.374	1,117,022	N.W., strong.
17	40.61	+0.25	207,350	211,131	61.5	62.5	102.9	3,372	—1,617	5.152	1,068,270	W., strong.
18	40.95	+0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	41.04	+0.10	207,404	209,734	61.5	62.1	102.8	3,374	—1,397	5,307	1,100,708	N., light.
20	41.20	+0.15	209,210	211,000	62.6	62.4	103.0	3,375	+1,266	5.114	1,069,814	N.W., light.
21	41.30	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	41.35	0.00	207,877	209,161	61.6	61.9	103.0	3,376	—1,839	5.158	1,072,266	N., light.
23	41.48	+0.10	211,451	212,296	62.6	62.8	102.8	3,377	+3,135	5.165	1,092,097	Calm.
24	41.50	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	41.50	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	41.50	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	41.60	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	41.70	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	41.70	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	41.69	0.00	218,608	218,748	64.7	64.7	102.9	3,380	+6,452	.....	.....	
31	41.73	0.00	217,778	217,778	64.4	64.4	103.9	3,380	— 970	4.888	1,064,462	W., light.
Feb. 1	41.70	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	41.61	—0.05	216,234	216,640	64.0	64.1	103.9	3,380	—1,138	4,979	1,076,725	S., light.
3	41.34	—0.35	216,288	217,606	64.0	64.4	103.9	3,380	+ 966	4.853	1,049,734	S., light.
4	40.79	—0.45	217,134	220,308	64.4	65.2	103.9	3,374	+2,702	4.727	1,026,309	S., strong.
5	39.90	—1.10	215,970	222,147	64.1	65.7	103.6	3,371	+1,839	4.541	980,803	W., very strong
6	38.72	—1.00	212,233	222,393	63.0	65.8	102.7	3,371	+ 246	4.382	929,904	S., light.
7	37.46	—1.25	205,316	219,729	60.9	65.0	102.6	3,371	—2,664	4.229	868,374	S., strong.
8	36.30	—1.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	35.14	—1.15	193,968	216,189	57.7	64.0	99.4	3,364	—3,540	4.058	787,120	W., strong.
10	34.15	—1.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	

* Reject. † High waves.

Discharge observations at Arkansas City, Ark.—Continued.

Date.	Gauge.		Dimensions of cross section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1885.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Feb. 11	32.59	—0.45	188,421	215,837	56.2	63.9	97.1	3,356	— 352	3.944	743,225	S., light.
12	32.19	—0.50	184,158	212,912	54.9	63.0	96.8	3,354	—2,925	3.966	730,365	N.
13	32.93	—0.26	184,790	214,420	55.1	63.4	95.6	3,354	+1,508	4.074	752,836	N., light.
14	32.70	—0.20	184,080	214,484	54.9	63.5	95.5	3,354	+ 64	4.171	767,829	Calm.
15	32.55	—0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	32.25	—0.20	179,871	211,785	53.6	62.7	95.5	3,353	—2,699	4.078	733,525	W., light.
17	32.18	—0.15	181,758	213,908	54.2	63.3	95.5	3,353	+2,123	4.178	759,442	S., light.
18	32.25	0.00	179,674	211,588	53.6	62.6	95.6	3,353	—2,320	4.090	734,787	W., strong.
19	32.30	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	32.20	—0.10	180,956	213,039	54.0	63.0	95.7	3,353	+1,451	4.188	757,822	N., strong.
21	31.97	—0.20	180,207	213,064	53.7	63.0	94.7	3,353	+ 25	4.028	725,963	N. E., light.
22	31.35	—0.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	30.52	—0.75	175,006	212,604	52.3	62.9	93.3	3,344	— 370	3.822	668,902	NE., strong.
24	29.64	—0.85	168,823	209,499	50.5	62.0	91.2	3,342	—3,195	3.707	625,866	NW., light.
25	28.45	—1.10	162,084	206,738	48.6	61.2	90.0	3,338	—2,761	.....	.....	Calm.
26	27.05	—1.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	25.39	—1.30	152,179	207,050	45.7	61.3	85.0	3,331	+ 312	3.354	510,424	S., light.
28	24.01	—1.60	146,272	205,744	43.9	60.9	83.7	3,328	—1,306	3.311	484,270	E., light.
Mar. 1	22.80	—1.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	22.09	—0.70	144,366	210,146	43.7	62.2	83.7	3,302	+4,402	3.255	469,891	Calm.
3	21.81	—0.25	144,518	211,225	43.8	62.5	83.2	3,301	+1,079	3.166	457,584	Calm.
4	21.77	—0.05	145,777	212,617	44.2	62.9	82.7	3,301	+1,392	3.266	476,135	NE., strong.
5	21.95	+0.05	144,162	210,736	43.7	62.4	84.5	3,301	—1,881	3.182	458,682	N., strong.
6	22.16	+0.25	145,437	211,013	44.1	62.4	82.6	3,301	+ 277	3.237	470,825	SW., light.
7	22.62	+0.50	146,945	210,962	44.5	62.4	85.5	3,302	— 51	3.340	490,803	N., strong.
8	23.15	+0.55	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	23.83	+0.75	152,241	212,298	45.8	62.8	85.2	3,323	+1,336	3.309	503,789	SE., light.
10	24.53	+0.75	154,370	212,111	46.4	62.8	87.0	3,330	— 187	3.460	534,116	SW., strong.
11	25.48	+0.80	155,650	210,222	46.7	62.2	87.3	3,332	—1,889	3.486	542,651	SW., light.
12	26.70	+1.30	158,835	209,340	47.6	61.9	88.1	3,337	— 882	3.576	567,990	S., light.
13	28.06	+1.30	164,755	210,648	49.3	62.3	89.2	3,340	+1,308	3.827	630,445	W., light.
14	29.26	+1.20	168,436	210,385	50.3	62.2	91.0	3,346	— 263	3.747	631,086	S., light.
15	30.20	+0.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	30.87	+0.65	174,438	210,998	52.0	62.4	92.1	3,353	+ 613	4.002	698,138	S., light.
17	31.37	+0.50	174,567	209,454	52.0	62.0	93.3	3,355	—1,544	4.107	716,933	N., strong.
18	32.02	+0.65	180,981	213,699	53.9	63.2	96.4	3,350	+4,245	4.100	741,980	NW., light.
19	32.71	+0.70	178,824	209,230	53.2	61.9	92.0	3,362	—4,469	4.287	766,661	W., strong.
20	33.41	+0.80	180,488	208,543	53.6	61.7	94.8	3,364	— 687	4.316	779,062	N., light.
21	34.01	+0.60	184,859	210,902	54.9	62.4	96.5	3,367	+2,359	4.186	773,810	
22	34.40	+0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	34.75	+0.25	187,655	211,209	55.7	62.5	97.6	3,369	+ 307	4.202	788,488	N., light.
24	34.83	+0.20	192,356	215,643	57.1	63.8	97.2	3,370	+4,437	4.165	801,188	NE., light.
25	34.86	+0.15	188,825	212,011	56.0	62.7	96.8	3,370	—3,632	4.193	791,786	NE., light.
26	34.75	—0.15	189,316	212,873	56.2	63.0	98.9	3,370	+ 862	4.234	801,535	Calm.
27	34.55	—0.25	188,810	213,039	56.0	63.0	96.7	3,369	+ 166	4.181	789,380	S., light.
28	34.28	—0.35	188,165	213,290	55.9	63.1	96.5	3,365	+ 251	4.352	818,810	NW., strong.
29	33.90	—0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	33.30	—0.60	185,640	214,058	55.2	63.3	95.5	3,362	+ 768	4.002	742,849	S., light.
31	32.60	—0.65	181,149	211,908	53.9	62.7	94.5	3,358	—2,150	3.946	714,826	Calm.
April 1	31.75	—0.70	178,475	212,078	53.2	62.7	94.0	3,354	+ 170	3.851	687,259	SE., light.
2	30.80	—1.05	173,935	210,714	51.9	62.3	94.0	3,350	—1,364	3.844	668,617	S., strong.
3	29.90	—1.05	167,984	207,790	50.1	61.5	89.5	3,351	—2,924	3.896	654,455	NW., strong.
4	28.86	—0.90	165,699	208,986	49.5	61.8	91.0	3,345	+1,196	3.729	617,823	N., light.
5	28.00	—0.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	27.34	—0.70	159,934	208,303	47.9	61.6	86.0	3,340	— 683	3.512	561,739	S., light.
7	26.92	—0.40	157,807	207,579	47.2	61.4	86.0	3,339	— 724	3.553	560,652	SE., light.
8	26.77	—0.10	157,628	207,908	47.2	61.5	87.0	3,343	+ 329	3.544	558,663	E., strong.
9	27.06	+0.20	157,554	206,864	47.1	61.2	85.0	3,343	—1,044	3.601	567,279	SE., light.

(*d*) WARRENTON, MISS.

SAINT LOUIS, *December* 23, 1885.

CAPTAIN: I have the honor to submit the following report upon the final reduction of discharge observations on the Mississippi River at Warrenton, Miss., between October 1, 1884, and April 6, 1885.

The party at this station was under the charge of Assistant Engineer J. W. Dorst

throughout the time of observations. Mr. F. R. Hathaway acted as a recorder to November 30 and Mr. I. O. Walker performed the same duties to the end of the season.

Observations at this station were made upon two parallel sections 200 feet apart and about one half mile below the landing at Warrenton. The lower section was used up to and including March 4, 1885, the upper one being used subsequent to that date. The ends of the sections were marked by range signals, and along the left bank a series of signals in a line at right angles to the section were set to locate positions on the section by means of a sextant set at the constant angle 14° 02′. A pocket sextant was used in locating positions on the section and was too small an instrument to give accurate locations with so small an angle. (For further explanation of this method of location see Report M. R. C. for 1883, p. 181.)

The instruments in use at this station consisted of Price meter No. 8, a Morse register, a break-circuit clock, electric batteries, transit, level, sextant, sounding leads and lines, etc. (The instruments and manner of using them were similar to those at Helena, which have already been described in my report on the reduction of work at that station.)

The coefficients to be used in reducing registrations of the meter to velocity in feet per second depend upon two series of observations. The first of these was made by Captain Smith S. Leach, January 11, 1885, the meter being moved alternately up and down stream through running water over a given distance and the time and number of registrations being observed.

Let z = velocity of the water supposed to be constant,
c = velocity of the meter through space,
x = number of registrations per second,
y = velocity of the meter through the water, and
a and b constants to be determined.

The observations have been reduced on the assumption that the relations of the quantities are expressed by the equations:

$$y = c - z = ax + b \text{ (when meter moves with the current.)}$$
$$y = c + z = ax + b \text{ (when meter moves against the current.)}$$

The eleven observations gave the following results:

$$a = +3.802$$
$$b = +0.335$$
$$z = +1.386$$
$$e_0 = \pm 0.056 = \text{mean error of an observation.}$$

The maximum residual error in the equations was 0.179.

The second series of observations was made by Assistant Dorst, March 18, 1885, in still water, and gave the following results:

$$a = +3.883$$
$$b = +0.447$$
$$e_0 = \pm 0.272 = \text{mean error of an observation.}$$

In combining these results, those of the first series were arbitrarily given five times the weight of those of the second series, and the resulting equation between the variables became:

$$y = 3.815x + 0.354.$$

These values have been used in reducing all the observations at this station.

The soundings were corrected in the note-books for errors of the lead line. The lead line corrections during the latter part of the season were very large, being about 12 feet in 70. As the soundings were not taken at regular intervals, the cross-sections were plotted on a horizontal scale of 1 inch = 200 feet, and on a vertical scale of 1 inch = 10 feet, and the depths at intervals of 100 feet scaled off from these cross-sections. Up to December 15, 1884, velocities were not measured at regular intervals across the section. The observed velocities for this period were plotted on the cross-sections with a vertical scale of 1 inch = 1 foot per second, and the transverse curve of velocities drawn. These velocities were then scaled off at intervals of 200 feet, and, with the scaled depths, were copied on the computation sheets, together with the width, gauge reading, and direction and force of wind. Subseqnent to January 2, 1885, velocities were observed at intervals of 200 feet, and were copied directly on the computation sheets. They have also been plotted on the cross-section sheets. The distance of the water's edge on each bank from the base was given in the notes, by means of which the distances of the end soundings from the shore were computed. The areas between soundings, partial areas, and total areas were then computed in the same manner as already described for Helena.

The counting of the registrations of the meter had been done in the field and the results were adopted in the office computations. The length of time of an observation

for velocity varied, but the exact times are not stated in the notes. The computation of the velocities from the registrations per second was performed by means of tables prepared for the purpose. The measurements for velocity were taken at six-tenths the depth, and no coefficients have been applied to the observed velocities to reduce them to mean vertical velocities. The partial areas were multiplied by the corresponding velocities to obtain partial discharges.

The results of the computation were then copied into the tabulation accompanying this report. The gauge-readings for days on which areas were measured were taken from the observer's notes and correspond to the mean time of the measurements for area. The readings given for other days are the means of the readings taken on each day when more than one were taken. The gauge was not read at regular hours, and hence the mean does not correspond to any particular hour. When but one reading was taken that has been given. The gauge read was established by Assistant Dorst on the left bank at the section. Its zero is stated in the notes to have been 65 feet above Cairo Datum Plane, but a comparison with gauge-readings at Vicksburg and Saint Joseph, and also with the readings of slope gauges on the opposite side of the river, shows that its zero was about 64 feet above Cairo Datum Plane. The quantities given in the column headed "Rise or fall in the preceding twenty-four hours," are the differences of gauge-readings, and do not correspond to the change in twenty-four hours.

The computation of datum areas has been made in the following manner: For the first section, datum was assumed to correspond to the gauge-reading of 41.46 feet observed February 2, 1885, that being the maximum gauge-reading during the period of observations. The width on that date was 3,812 feet. The observed area on that date was 180,371 feet. The slope of the bank was assumed to be uniform below the stage of 15 feet, between 15 and 25 feet, between 25 and 35 feet, and between 35 and 41.46 feet, the widths being taken as follows:

At the stage of 15 feet, width = 2,510 feet.
At the stage of 25 feet, width = 2,982 feet.
At the stage of 35 feet, width = 3,386 feet.

The areas between these stages, used in computing datum areas of lower stages, are as follows:

Between 15 and 25 feet, area = 27,460 square feet.
Between 25 and 35 feet, area = 31,840 square feet.
Between 35 and 41.46 feet, area = 23,250 square feet.

The datum areas for the first section have then been computed by the following formulæ, h being gauge-reading, and w width:

$$\text{Above 35 feet, datum area} = (41.46-h)\left(\frac{3{,}812+w}{2}\right) + \text{water area.}$$

$$\text{Between 25 and 35 feet, datum area} = 23{,}250+(35-h)\left(\frac{3{,}386+w}{2}\right) + \text{water area.}$$

$$\text{Between 15 and 25 feet, datum area} = 55{,}090+(25-h)\left(\frac{2{,}982+w}{2}\right) + \text{water area.}$$

$$\text{Below 15 feet, datum area} = 82{,}550+(15-h)\left(\frac{2{,}510+w}{2}\right) + \text{water area.}$$

For the second section, datum has been assumed to correspond to the gauge reading 33.99 feet, that being the highest stage at which observations were made on that section. The width at that stage was 3,352 feet. The datum areas for this section have been computed by the formulæ:

$$\text{Datum area} = (33.99-h)\left(\frac{3{,}352+w}{2}\right) + \text{water area.}$$

Mean depth has been obtained by dividing the water area by the width, and mean datum depth has been obtained by dividing the datum area by the datum width. Maximum depths have been taken directly from the soundings.

Scour or fill has been obtained by taking differences of datum areas, scour being indicated by the positive sign.

Mean velocity has been obtained by dividing the discharge by the water area.

The direction of the wind is indicated by the point of the compass from which it comes, and the force is given in terms of its velocity in miles per hour.

Slope observations consisted of a number of readings of gauges on each bank at distances from the section varying from less than one-half mile to about one mile. Ten readings of each gauge were taken at three-minute intervals, five being taken simultaneously on the two upper gauges, then ten on the two lower gauges and, finally, five more on the upper gauges. It is stated that the gauges were all set to read from 65 feet above the Cairo Datum Plane, but as the resulting elevations of water-surface on the left bank are uniformly about 1 foot higher than on the right bank, it is evident that such could not have been the case. The gauges on the left bank are

without doubt about 64 feet above Cairo Datum Plane. The slope has been computed in terms of the sine of the inclination and is given in terms of the seventh place of decimals.

Accompanying this report is a plate on which are plotted the mean velocities, areas, and discharges of both sections as abscissas to gauge heights as ordinates, the scales for each system of co-ordinates being given on the plate. The gauge-readings and datum areas of both sections have been plotted in chronological order, there having been added to the datum areas of the second section 20,000 square feet to make them approximately coincide with datum areas of the first section. The first section, as sounded on February 2, 1885, is also shown on the plate.

The gauge-readings, areas, datum areas, mean velocities, and discharges for both sections have been plotted in chronological order on another plate for purposes of inspection and study. The scale is too large to admit of reproduction of the plate.

In making the reductions nearly all the gentlemen employed in the computing division have taken part. The greatest care has been taken to eliminate from the results all errors of computation.

Very respectfully, your obedient servant,

L. L. WHEELER,
In charge Computing Division.

Capt. THOMAS TURTLE,
Corps of Engineers, U. S. Army,
Secretary Mississippi River Commission.

Discharge observations at Warrenton, Miss.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination.	
			Area.		Depth.									
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.						Right bank.	Left bank.
1884.	Ft.	Ft.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Ft.	Cu. ft.			
Oct. 1														
2														
3														
4														
5														
6	8.57													
7	9.27	+0.70												
8	12.67	+3.40	88,753	177,081	36.2	46.5	61.0	2,451		4.629	410,828	Calm		
9	14.17	+1.50												
10	14.57	+0.40												
11	15.87	+1.30												
12	16.67	+0.80												
13	16.87	+0.20												
14	16.87	0.00	98,943	176,651	38.3	46.3	63.0	2,581	— 430	4.654	460,512	N., ¾		
15	16.07	—0.80	97,519	177,327	38.2	46.5	64.2	2,555	+ 676	4.331	422,347	N., ½		
16	15.87	—0.20	96,924	177,286	38.0	46.5	64.9	2,553	— 41	4.202	407,262	Calm		
17	15.30	—0.57	94,994	176,740	37.8	46.4	63.8	2,513	— 546	4.529	430,199	N., ½		
18	14.92	—0.38												
19	14.67	—0.25												
20	14.63	—0.04												
21	14.74	+0.11												
22	14.87	+0.13	91,721	174,597	36.6	45.8	62.0	2,509	—2,143	4.019	368,626	N., 2		
23	14.78	—0.09												
24	14.67	—0.11												
25	14.52	—0.15	89,881	173,635	35.8	45.6	62.0	2,508	— 926	4.323	388,524	E., 2		
26	14.17	—0.35												
27	13.93	—0.24												
28	13.58	—0.35	88,876	174,950	36.2	45.9	60.2	2,454	+1,315	3.796	337,350	Calm		
29	13.20	—0.38												
30	12.80	—0.40	87,259	175,258	35.7	46.0	59.5	2,444	+ 308	3.839	334,961	N., ½		
31	12.64	—0.16												
Nov. 1	12.57	—0.07												
2	12.70	+0.13												
3	12.84	+0.14												
4	12.87	+0.03	84,972	172,798	34.8	45.3	59.8	2,444	—2,460	3.937	334,521			
5	12.74	—0.13												
6	12.63	—0.11	83,640	173,385	34.3	45.5	59.2	2,438	+ 587	4.032	337,211	NE., 2		

Discharge observations at Warrenton, Miss.—Continued.

Date.	Gauge. Reading.	Gauge. Rise or fall in the preceding 24 hours.	Dimensions of cross-section of discharge. Area. Water.	Area. Below datum.	Depth. Mean.	Depth. Mean datum.	Depth. Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination. Left bank.	Right bank.
1884.	Ft.	Ft.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Ft.	Cu. ft.			
Nov. 7	12.51	—0.12												
8	12.32	—0.19	84,578	174,247	34.8	45.7	59.3	2,433	+ 862	3.974	336,139	Calm		
9	12.07	—0.25												
10	11.59	—0.48	82,622	173,561	34.3	45.5	58.9	2,410	— 696	3.789	313,047	Calm		
11	11.02	—0.57												
12	10.58	—0.44	81,422	174,744	34.4	45.9	58.4	2,364	+1,183			Calm		
13	9.70	—0.88	78,948	174,345	33.8	45.8	57.6	2,338	— 399			Calm		
14	9.14	—0.56	76,259	172,908	33.1	45.4	56.3	2,303	—1,437	3.601	274,623	NE., ½		
15	8.45	—0.69	75,858	174,115	33.2	45.7	55.8	2,287	+1,207	3.695	280,311	Calm		
16	8.05	—0.40												
17	7.27	—0.78	72,342	173,305	32.1	45.5	54.1	2,255	— 810	3.444	249,154	Calm		
18	6.84	—0.43												
19	6.33	—0.51	70,228	173,291	31.6	45.5	55.0	2,222	— 14	3.445	241,911	NW., ½		
20	5.83	—0.50												
21	5.49	—0.34												
22	5.11	—0.38	66,614	172,415	30.4	45.2	53.7	2,192	— 876	3.545	236,156	E., 2		
23	5.02	—0.09												
24	4.96	—0.06	67,015	173,069	30.9	45.4	53.8	2,172	+ 654	3.379	226,448	NE., ½		
25	4.83	—0.13												
26	4.74	—0.09												
27	4.61	—0.13	66,280	173,826	30.7	45.6	53.0	2,160	+ 757	3.550	235,274	W., ½		
28	4.56	—0.05												
29	4.45	—0.11	64,880	172,033	30.1	45.1	53.3	2,155	—1,793	3.345	217,045	S., ½	317	— 275
30	4.48	+0.03												
Dec. 1	4.60	+0.12	65,750	171,714	30.4	45.0	53.8	2,160	— 319	3.607	237,192	SW., ½		
2	5.00	+0.40												
3	5.57	+0.57	68,095	172,862	30.9	45.3	53.8	2,202	+1,148	3.252	221,440	SE., ¾		
4	6.38	+0.81	69,606	172,551	31.3	45.3	54.8	2,221	— 311	3.547	246,917	S., 2		
5	7.30	+0.92												
6	7.79	+0.49	70,547	170,235	31.4	44.7	55.4	2,244	—2,316	3.646	257,229	S., 4		
7	7.75	—0.04												
8	7.53	—0.22												
9	6.94	—0.59	69,582	171,170	31.4	44.9	55.5	2,214	+ 935	3.428	238,538			
10	6.42	—0.52	67,985	170,724	31.0	44.8	55.3	2,196	— 446	3.650	248,177	S., ½	822	— 550
11	5.62	—0.80												
12	5.05	—0.57	66,150	172,033	30.3	45.1	54.1	2,180	+1,309	3.389	224,197	NW., 4		
13	4.27	—0.78	64,605	172,317	29.6	45.2	52.6	2,180	+ 284	3.344	216,026	N., 1		
14	3.86	—0.41												
15	3.61	—0.25	63,405	172,653	29.1	45.3	52.3	2,177	+ 336	3.297	209,054	Calm	728	— 550
16	3.96	+0.35												
17	5.23	+1.27											—1,065	—1,567
18	6.96	+1.73												
19	9.27	+2.31												
20	11.26	+1.99												
21	12.50	+1.24												
22	13.84	+1.34												
23	14.48	+0.64												
24	14.77	+0.29												
25	14.92	+0.15												
26	14.76	—0.16												
27	14.23	—0.53												
28	13.70	—0.53												
29	13.98	+0.28												
30	14.29	+0.31												
31	14.77	+0.48												
1885.														
Jan. 1	16.55	+1.78												
2	19.58	+3.03	105,631	176,211	38.7	46.2	69.1	2,735	+3,558	5.016	529,870	NE., 3		
3	22.37	+2.79												
4	24.84	+2.47												
5	27.45	+2.61												
6	29.48	+2.03												
7	29.72	+0.24											747	532
8	30.96	+1.24	149,220	185,786	46.6	48.7	81.6	3,205	+9,575	5.941	886,498	SW., ½		
9	32.03	+1.07												
10	32.68	+0.65	151,236	182,228	46.0	47.8	84.2	3,288	—3,558	5.968	902,605	SW		
11	33.30	+0.62												
12	33.94	+0.64	154,039	180,858	46.0	47.4	85.1	3,348	—1,370	5.757	886,846	S., ½		
13	34.53	+0.59	154,928	179,770	45.7	47.2	85.4	3,388	—1,088	6.371	987,031	S., ½		
14	35.48	+0.95												

Discharge observations at Warrenton, Miss.—Continued.

Date.	Gauge. Reading.	Gauge. Rise or fall in the preceding 24 hours.	Dimensions of cross-section of discharge. Area. Water.	Area. Below datum.	Depth. Mean.	Depth. Mean datum.	Depth. Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination. Left bank.	Right bank.
1884.	Ft.	Ft.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Ft.	Cu. ft.			
15	36.29	+0.81	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	— 653	798
16	37.07	+0.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
17	37.86	+0.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	38.49	+0.63	161,562	172,435	46.0	45.2	86.7	3,510	—7,335	6.237	*1,007,795	N., ½	.....	.....
19	38.78	+0.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
20	39.13	+0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	39.43	+0.30	170,608	178,158	47.0	46.7	90.4	3,626	+5,723	6.400	†1,091,871	N., ½	.....	.....
22	39.94	+0.51	170,975	176,646	46.9	46.3	90.3	3,650	—1,512	6.729	1,150,556	N., 2	.....	.....
23	40.27	+0.33	172,524	176,977	47.0	46.4	90.8	3,672	+ 331	6.381	‡1,100,885	Var., 1	.....	.....
24	40.69	+0.42	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	40.88	+0.19	175,447	177,624	47.5	46.6	90.7	3,696	+ 647	6.185	1,085,098	Var., 1	.....	.....
26	41.08	+0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
27	41.14	+0.06	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	374	444
28	41.24	+0.10	175,788	176,630	45.8	46.3	90.6	3,840	— 994	5.861	1,030,240	N., ½	358	476
29	41.31	+0.07	175,584	176,152	45.8	46.2	89.4	3,835	— 472	6.258	1,098,843	S., 1	.....	.....
30	41.32	+0.01	175,765	176,300	45.8	46.2	89.6	3,836	+ 142	6.099	§1,071,912	Calm	.....	.....
31	41.34	+0.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	259	523
eb. 1	41.30	—0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	41.46	+0.16	180,371	180,371	47.3	47.3	90.6	3,812	+4,071	5.879	1,060,477	S., 1	.....	.....
3	41.51	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	41.41	—0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	333	603
5	41.26	—0.15	176,558	177,319	46.5	46.5	91.6	3,800	—3,052	6.092	1,075,608	W., 5	.....	.....
6	40.99	—0.27	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
7	40.35	—0.64	179,696	183,843	49.2	48.2	89.3	3,654	+6,524	5.870	1,054,848	S., 6	.....	.....
8	40.12	—0.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	39.33	—0.79	168,509	176,369	47.2	46.3	84.8	3,568	—7,474	.....	.....	W., 8	.....	.....
10	38.05	—1.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
11	37.28	—0.77	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
12	36.75	—0.53	159,046	176,242	45.6	46.2	79.0	3,490	— 127	.....	.....	Calm	543	587
13	35.97	—0.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
14	35.35	—0.62	153,352	175,342	45.3	46.0	79.4	3,386	— 900	5.046	773,851	Calm	.....	.....
15	34.68	—0.67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	34.27	—0.41	154,000	179,714	45.8	47.1	80.5	3,366	+4,372	5.232	805,740	W., 1½	.....	.....
17	33.78	—0.49	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
18	33.57	—0.21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	33.35	—0.22	152,773	181,546	46.2	47.6	81.9	3,308	+1,832	5.125	782,964	N., 2	296	539
20	33.15	—0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	33.03	—0.12	150,311	180,139	45.7	47.3	81.1	3,292	—1,407	5.238	787,305	NE., 2	.....	.....
22	32.86	—0.17	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	32.45	—0.41	147,492	179,231	45.1	47.0	78.9	3,272	— 908	5.218	769,583	NE., 5	.....	.....
24	32.13	—0.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	31.75	—0.38	147,691	181,725	45.5	47.7	80.2	3,249	+2,494	4.893	722,621	NE., 1	.....	.....
26	30.70	—1.05	143,343	180,740	44.9	47.4	78.6	3,193	— 985	4.772	684,160	E., 1	.....	.....
27	29.77	—0.93	140,169	180,500	44.6	47.4	77.9	3,146	— 240	4.608	645,951	S., 1	333	444
28	28.51	—1.26	136,935	181,252	44.1	47.5	76.0	3,106	+ 752	4.495	615,522	S., 2	.....	.....
[ar. 1	26.78	—1.73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
2	25.59	—1.19	125,527	178,804	41.9	46.9	72.5	2,996	—2,448	4.308	540,752	S., 3	.....	.....
3	24.12	—1.47	120,885	178,590	40.9	46.8	70.8	2,961	— 214	4.348	525,636	S., 3	.....	.....
4	23.47	—0.65	118,563	178,188	40.4	46.7	70.4	2,946	— 402	4.190	496,768	S., 3	.....	.....
‖5	22.84	—0.63	119,189	153,977	41.3	45.9	67.8	2,888	.....	4.112	490,118	Var., 3	333	555
6	22.25	—0.59	116,329	152,879	40.4	45.6	66.9	2,875	—1,098	4.079	474,516	NE., 3	.....	.....
7	21.99	—0.26	115,738	153,082	40.3	45.7	66.8	2,871	+ 203	4.171	482,808	NW., 3	.....	.....
8	21.99	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
9	22.18	—0.19	119,739	156,421	41.8	46.7	67.2	2,860	+3,339	4.234	507,075	E., 10	333	365
10	22.53	—0.35	121,612	157,321	42.2	46.9	67.7	2,880	+ 900	.....	.....	W., 3	.....	.....
11	23.07	—0.54	120,338	154,452	41.5	46.1	68.9	2,897	—2,869	4.394	528,821	S., 4	.....	.....
12	23.73	—0.66	123,317	155,472	42.3	46.4	69.8	2,917	+1,020	4.375	539,556	SW., 20	.....	.....
13	24.71	+0.98	124,329	153,505	42.3	45.8	69.4	2,939	—1,967	4.460	554,481	N., 6	.....	.....
14	25.65	+0.94	128,860	155,331	43.0	46.3	70.7	2,995	+1,826	4.537	584,661	SW., 5	.....	.....
15	26.84	+1.19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
16	27.99	+1.15	133,082	152,306	43.5	45.4	73.0	3,055	—3,025	4.786	636,878	Calm	.....	.....
17	29.04	+1.05	138,278	154,247	44.6	46.0	75.3	3,100	+1,941	4.803	664,084	SW., 12	963	635
18	29.83	+0.79	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
19	30.37	+0.54	140,459	152,238	44.6	45.4	75.8	3,155	—2,009	4.885	686,080	SW., 7	.....	.....
20	31.14	+0.77	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
21	31.90	+0.76	146,226	153,094	45.4	45.7	77.1	3,220	+ 856	4.936	721,822	Calm	.....	.....
22	32.67	+0.77	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
23	33.00	+0.33	148,722	151,025	44.8	45.0	78.4	3,321	—2,069	5.240	779,268	N., 12	.....	.....

* Slough dia. = 3,002. † Slough dia. = 4,236. ‡ Slough dia. = 3,700. § Slough dia. = 6,640.
‖ New section.

Discharge observations at Warrenton, Miss.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope, sin. of inclination.	
			Area.		Depth.									
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.						Left bank.	Right bank.
1884.	*Ft.*	*Ft.*	*Sq. ft.*	*Sq. ft.*	*Ft.*	*Ft.*	*Ft.*	*Ft.*	*Sq. ft.*	*Ft.*	*Cu. ft.*			
24	33.44	+0.44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
25	33.75	+0.31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
26	33.99	+0.24	152,964	152,964	45.6	45.6	80.7	3,352	+1,939	5.285	808,361	SW., 4..	234	650
27	34.02	+0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
28	33.99	—0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
29	33.95	—0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
30	33.65	—0.30	147,366	148,506	44.0	44.3	79.5	3,351	—4,458	5.178	763,004	SW., 4..	.....	.....
31	33.31	—0.34	148,831	151,104	44.7	45.1	79.3	3,331	+2,598	5.097	758,586	E., 2	370	635
Apr. 1	32.83	—0.48	149,100	152,965	45.0	45.6	79.3	3,313	+1,861	4.724	704,392	S., 8 ...	.....	.....
2	32.16	—0.67	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3	31.86	—0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4	31.04	—0.82	141,002	150,743	43.4	45.0	76.8	3,251	—2,222	4.838	682,120	NW., 3 .	.....	.....
5	30.07	—0.97	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
6	29.14	—0.93	132,715	148,521	41.9	44.3	74.5	3,166	—2,222	4.799	636,883	(?), 12...	.....	.....

(*e*) Red River Landing, Louisiana.

Saint Louis, Mo., *April* 10, 1886.

Captain: I have the honor to submit the following report upon the final reduction of discharge observations made on the Mississippi River at Red River Landing, on Old River, connecting the Red and Mississippi rivers, and on the Atchafalaya River near Barbre's Landing. These observations were made between October 6, 1884, and March 31, 1885, by a party under the direction of Assistant Engineer Homer P. Ritter. Mr. E. L. Harman acted as recorder. A steam engineer and two boatmen completed the party.

(1) *Observations on the Mississippi River.*

Observations at this station were made upon a section about 300 feet below the warehouse at Red River Landing, and 100 feet below the section used in 1881–'82. The method of locating points on the section was as follows: At each end of the section a 1,000-foot base was measured at right angles to the section, and a system of ranges set to intersect the section at intervals of 200 feet, commencing at the base on the right bank. The signals on each bank were used out from that bank to the middle of the river. The positions of the greater part of the soundings were also determined by sextant angles to the base on the right bank. The distances of the water's edge from signals at each end were determined each day and determined the river's width.

The instruments in use at this station were Price meters B and No. 9, a break-current clock, electric batteries, transit, level, sextant, sounding leads and lines, etc. (The instruments and manner of using them were similar to those at Helena, which have already been described in my report on the reduction of work on that station.)

Meter B was used up to and including October 13. No observations were made for determining the coefficients of this meter for reducing registrations to velocity in feet per second, but early in January, 1885, Capt. Smith S. Leach and Assistant L. C. Jones made three series of observations for this purpose. These observations were made by moving the meter alternately up and down stream through running water over a known distance, and noting the times and numbers of registrations.

Let s = velocity of the water supposed constant,
c = velocity of the meter through space,
x = number of registrations per second,
y = velocity of the meter through the water, and
a and b = constants to be determined.

The observations have been reduced on the assumption that the relations of the quantities are expressed by the equations—

$$y = c - s = ax + b \text{ (when meter moves with the current),}$$
$$y = c + s = ax + b \text{ (when meter moves against the current.)}$$

The following table gives the result of the observations:

Station.	Date.	No. of observation.	a.	b.	Mean error of observation.
Arkansas City, Ark	Jan. 8	19	+1.784	+0.262	±0.059
Warrenton, Miss	Jan. 11	12	+1.772	+0.194	±0.085
Red River Landing, La	Jan. 14	13	+1.792	+0.262	±0.284

The means of the above results were used to reduce observations made with meter B, the equation being—

$$y = +1.783\,x + 0.239.$$

Meter No. 9 was used from October 15 to the end of the season. A series of thirteen observations was made in still water October 23, for determining the coefficients of this meter, but the observations were so discrepant that they have been rejected. A series of fifteen observations was made in still water for the same purpose November 8, which gave the following results:

$$y = +3.898\,x + 0.372.$$

A series of seventeen observations was made by Assistant L. C. Jones in running water January 14, which have been reduced by the method given above for meter B. The resulting equation is—

$$y = +4.029\,x - 0.016.$$

No subsequent observations were made to determine the coefficients of this meter, and it became necessary to adopt from these discrepant results some coefficients with which to reduce the velocity measurements. The coefficients in the two equations were combined, being given weight inversely as the squares of their mean errors and the following equation adopted to be used in reducing all measurements made with this meter:

$$y = +3.938\,x + 0.341.$$

In the notes no tests of lead line are recorded and no corrections given, and therefore none have been applied to the soundings. Prior to October 30 soundings were located by sextant angles to the 1,000-foot base on the right bank. These sections were plotted on cross-section paper with the horizontal scale 1 inch = 200 feet, and the vertical scale 1 inch = 10 feet. The depths were then scaled off from these sections at intervals of 100 feet and used in computing the areas. Subsequent to October 30 the locations of the soundings are given in the notes, both by the stations determined by the system of intersecting ranges and by sextant angles to the 1,000-foot base on the right bank. In many cases, however, the soundings have been located by the signals only. While the two locations do not exactly agree, yet the difference is not sufficient to materially change the area whichever method of location is used. If we suppose Δw to be the difference in location of a sounding by the two methods, and d_1 and d_2 the soundings either side of it, the difference in area caused by using one or the other of the locations will be

$$\Delta A = \tfrac{1}{2}\,\Delta w\,(d_1 - d_2).$$

As the form of the section used was such that the depths change very slowly except near the banks, the difference in the total area would be small whether one or the other location was used. While there is no doubt that the sextant angles give the better location, yet the work of computation of areas would be very much more using them than using the location by signals. The areas have therefore been computed, using the signal location of soundings, which supposes the soundings to be 100 feet apart. A number of areas have been computed, using each method of location, the differences between areas computed by the two methods being less than 1 per cent.

The notes subsequent to October 30 have been copied directly from the books on the computation sheets with the gauge-reading, width, and direction and force of wind. The distances of the end soundings from the water's edge were computed from the notes and copied on the sheets at the beginning and end of the series of soundings. The areas included between the end soundings and the shores were computed as right-angled triangles. The areas between soundings have been computed as if the section

of the bed between soundings was a right line. After all the areas between soundings had been computed, they were summed, and, with the end areas, gave the total water area of the section. The total area was then checked by being computed directly from the sum of the soundings. The two areas either side of a velocity station were then summed and gave the partial area pertaining to that velocity station. The sum of the partial areas gave the total area and formed a check on the computation of the partial areas.

The counting of the registrations of the meter had been done in the field, and the results were adopted in the office computation. The length of time of an observation for velocity is stated to have been not less than two minutes, but in the notes the number of registrations per minute is given. Up to and including October 13, which includes all observations taken with meter B, measurements for velocity were taken at mid-depth, while subsequent to that date they were taken at six-tenths of the depth from the surface, the launch not being anchored. The velocities observed at mid-depth have been divided by the coefficient 1.034 to reduce them to six-tenths depth velocities. This coefficient was obtained from the mean of all observations made in 1881 and 1882 on the form of the vertical curve of velocity of the five stations occupied. (See Report of Mississippi River Commission for 1884, p. 189.)

Prior to October 30 the points of velocity measurements on the section were located by sextant angles to the 1,000-foot base on the right bank. For this period the velocities have been plotted on the same sheets as the cross-sections, with the same horizontal scale and with a vertical scale of 1 inch = 1 foot per second. The transverse curves of velocities have been drawn and velocities scaled off at regular intervals of 200 feet to be used in computing the discharge. Subsequent to October 30 the velocities are given as being taken at the stations located by the intersecting ranges and have been copied directly on the computation sheets. Commencing with January 26 an additional velocity was measured about 50 feet from the right bank, and after February 18 an additional velocity was measured near the left bank. The velocities were computed from the registrations by means of a special table prepared for that purpose.

The partial areas were then multiplied by the corresponding velocities giving the partial discharges. The sum of the partial discharges gave the total discharge per second. The computation of areas and discharges were identical in form with that used in Helena, a sample of which is given in the report on reduction of observations at that station.

The results of the computation were then copied into the tabulation accompanying this report. The gauge-reading for days on which areas were measured were taken directly from the notes and correspond to the mean time of soundings. The readings given on other days are means of morning and evening readings and correspond to 12 m. The gauge read was established by this party about one-half mile above the regular gauge, and is said to have been at the same elevation. The rise or fall in twenty-four hours for any date is the difference between the mean gauge-readings for that day and the preceding one.

The computation of datum areas has been made in the following manner:

Datum was assumed to correspond to the gauge-reading 48.50 feet, that being the reading of the high water of 1882, and the same datum as used in the discharge work of 1881 and 1882. Datum width was taken as 3,918 feet. The maximum stage during the observations occurred February 4, 1885, when the gauge read 42.08 feet, and the observed width was 3,821 feet. The area of the section included between gauge-readings of 42.08 and 48.50 feet was computed as being 24,842 square feet. The slope of the banks was assumed to be uniform below the stage of 10 feet, between 10 and 20 feet, between 20 and 30 feet, between 30 and 40 feet, and between 40 and 42.08 feet, and the following widths adopted in computing datum areas: at 10 feet, 3,574 feet; at 20 feet, 3,650 feet; at 30 feet, 3,755 feet; and at 40 feet, 3,793 feet. Datum areas have then been computed by the following formulæ, w being observed width, and h gauge-reading:

Between 40 and 42.08 feet—

$$\text{Datum area} = 24{,}842 + (42.08 - h)\,\frac{3821 + w}{2} + \text{water area.}$$

Between 30 and 40 feet—

$$\text{Datum area} = 24{,}842 + (42.08 - 40.00)\,\frac{3821 + 3793}{2} + (40 - h)\,\frac{3793 + w}{2} + \text{water area.}$$

$$= 32{,}762 + (40 - h)\,\frac{3793 + w}{2} + \text{water area.}$$

Between 20 and 30 feet—

$$\text{Datum area} = 32{,}762 + (40 - 30)\,\frac{3793 + 3755}{2} + (30 - h)\,\frac{3755 + w}{2} + \text{water area.}$$

$$= 70{,}502 + (30 - h)\,\frac{3755 + w}{2} + \text{water area.}$$

Between 10 and 20 feet—

$$\text{Datum area} = 70{,}502 + (30-20)\frac{3755+3650}{2} + (20-h)\frac{3650+w}{2} + \text{water area.}$$

$$= 107{,}527 + (20-h)\frac{3650+w}{2} + \text{water area.}$$

Below 10 feet—

$$\text{Datum area} = 107{,}527 + (20-10)\frac{3650+3574}{2} + (10-h)\frac{3574+w}{2} + \text{water area.}$$

$$= 143{,}647 + (10-h)\frac{3574+w}{2} + \text{water area.}$$

It will be noticed that a large change takes place in the datum area between January 3 and January 6. The section of January 6 is shown on the plate accompanying this report in full lines, and that of January 3 by dotted lines. It will be seen by a comparison of these sections that this change is a nearly uniform increase across the section, the increase in mean datum depth being 2.4 feet. It is much to be doubted if such a change in the section really took place. The only note which has any relation to the subject is a statement in the journal that a new lead line was tagged January 5. It is also probable that a heavier lead came into use on January 6, as Assistant Ritter, in his report, states that he used "a 15-pound lead for ordinary stages, and a 20-pound lead for high stages." Whatever may have caused the change in datum area, an inspection of the datum area curve makes it evident either that the cause existed for some time prior to January 3, or else continued for some time after January 6.

Mean depth has been obtained by dividing the water area by the width, and mean datum depth by dividing the datum area by the datum width. Maximum depth has been taken directly from the soundings. Scour and fill have been obtained by taking differences of datum areas, scour being indicated by the positive sign.

Mean velocity has been obtained by dividing the discharge by the water area. During the higher stages of the river the partial discharges belonging to the velocity stations near the right bank approached 100,000 cubic feet per second. A change in the single measured velocity at one of those stations would therefore have a large effect on the total discharge, and it would seem desirable to have a greater number of measurements to determine so large a partial discharge.

The direction of the wind has been given in the notes with reference to the current, but in the tabulation the direction has been given with reference to the points of the compass. The force has been indicated as given in the observer's notes.

A number of slope observations were made by reading gauges on each bank approximately one-half mile above and below the section. As there is no means of determining the relative elevations of these gauges, except the statement that "they were set simultaneously at low water," the slope observations have not been reduced.

Accompanying this report is a plate on which are plotted the velocities, areas, and discharges as abscissas to gauge heights as ordinates, the scales being given on the plate. The mean gauge-readings and the datum areas have also been plotted in chronological order. The section as sounded January 6 is shown on the plate, also as sounded January 3. The gauge-readings, areas, discharges, mean velocities, and datum areas have also been plotted on another plate in chronological order for purposes of inspection and study.

(2) *Observations on Old River.*

Observations were made upon a section of about 2,000 feet below the foot of Turnbull Island. Assistant Ritter states that the section is the same as section H, which was sounded in 1882 by Assistant John Ewens, and in 1883 by Assistant Arthur Owen Wilson. (See Report Miss. River Com'n for 1884, p. 301.)

On the west bank a 300-foot base was measured at right angles to the section, and until January 2, soundings were located by transit angles, measured from the extremity of this base. On January 6 a new position, 280 feet from the section, was taken for the transit, which was used until January 17, when a 500-foot base was measured, also on the west bank, and soundings subsequent to that date located by sextant angles measured to signals at the extremities of this base.

The positions of velocity measurements, after and including January 17, were determined by sextant angles measured to the 500-foot base. The method of locating the velocity stations prior to that date is not stated, their distances from the banks in feet being given in the notes. Five velocity stations were usually occupied for each measured discharge.

The same instruments were used on this section as on the Red River Landing section, and the same coefficients have been used both for reducing registrations of meters to

velocity in feet per second, and for reducing mid-depth velocities to six-tenths depth velocities.

The cross-sections have all been plotted on the horizontal scale, 1 inch = 100 feet, and vertical scale, 1 inch = 10 feet. The depths have then been scaled off at regular intervals of 100 feet, and with these scaled depths the areas have been computed in the same manner as already described for Red River Landing. The velocities have also been plotted on the cross-sections with the vertical scale, 1 inch = 1 foot per second, and the transverse curve of velocities drawn. Velocities were then scaled off at points mid-way between the scaled depths and multiplied into the included areas for the partial discharges. The sum of the partial discharges gave the total discharge.

The results of the computation were then copied into the tabulation accompanying this report. The gauge-readings are from a gauge at the section which was read at the beginning and end of an observation. The gauge was established November 1, its zero being 17.35 feet above Cairo Datum Plane. Readings prior to that date have been computed by adding 6.15 feet to the readings of the gauge in the main river. The quantity, 6.15 feet, is the mean difference between readings of the two gauges from November 1 to December 26, leaving out two days on which there was no current. The difference of readings between these dates varied from 6.00 to 6.38 feet, and as the current was in the same direction as during October, it is probable that the computed readings closely represent the stages at the section. As the gauge was read only when observations were made on the section, the rise or fall in 24 hours can not be given.

Datum areas have been computed in the following manner. Datum was assumed at the water surface on February 3, 1885, when the gauge read 48.41 and the width was 952 feet. All widths down to a stage of 44 feet have been taken as 952 feet. The slopes of the banks have been assumed uniform below 16 feet, between 16 and 26 feet, between 26 and 36 feet, between 36 and 40 feet, and between 40 and 44 feet. At 36 feet a large change in width takes place on account of the water overflowing the bar on the west bank. The width at 36 feet for computing areas above 36 feet has been taken as 828 feet, but for computing areas below 36 feet as 634 feet. The widths at stages of 40, 26, and 16 feet have been taken as 840, 610, and 520 feet respectively. Datum areas have then been computed by the following formulæ:

Between 44 and 48.41 feet—

$$\text{Datum area} = (48.41 - h)\,952 + \text{water area.}$$

Between 40 and 44 feet—

$$\text{Datum area} = (48.41 - 44.00)\,952 + (44 - h)\,\frac{952 + w}{2} + \text{water area.}$$

$$= 4{,}198 + (44 - h)\,\frac{952 + w}{2} + \text{water area.}$$

Between 36 and 40 feet—

$$\text{Datum area} = 4{,}198 + (44 - 40)\,\frac{952 + 840}{2} + (40 - h)\,\frac{840 + w}{2} + \text{water area}$$

$$= 7{,}782 + (40 - h)\,\frac{840 + w}{2} + \text{water area.}$$

Between 26 and 36 feet—

$$\text{Datum area} = 7{,}782 + (40 - 36)\,\frac{840 + 828}{2} + (36 - h)\,\frac{634 + w}{2} + \text{water area.}$$

$$= 11{,}118 + (36 - h)\,\frac{634 + w}{2} + \text{water area.}$$

Between 16 and 26 feet—

$$\text{Datum area} = 11{,}118 + (36 - 26)\,\frac{634 + 610}{2} + (26 - h)\,\frac{610 + w}{2} + \text{water area.}$$

$$= 17{,}338 + (26 - h)\,\frac{610 + w}{2} + \text{water area.}$$

Below 16 feet—

$$\text{Datum area} = 17{,}338 + (26 - 16)\,\frac{610 + 520}{2} + (16 - h)\,\frac{520 + w}{2} + \text{water area.}$$

$$= 22{,}968 + (16 - h)\,\frac{520 + w}{2} + \text{water area.}$$

From January 14 to February 18, inclusive, relatively large changes take place in the datum areas, some of which can not be taken as real changes in the section. The large datum area of January 14, for example, is caused by a widening of the entire section, which is not shown when the section is sounded January 17. The error in this case might be due to some error in the length of the base from which the dis-

Between 10 and 20 feet—

$$\text{Datum area} = 70{,}502 + (30-20)\frac{3755+3650}{2} + (20-h)\frac{3650+w}{2} + \text{water area.}$$

$$= 107{,}527 + (20-h)\frac{3650+w}{2} + \text{water area.}$$

Below 10 feet—

$$\text{Datum area} = 107{,}527 + (20-10)\frac{3650+3574}{2} + (10-h)\frac{3574+w}{2} + \text{water area.}$$

$$= 143{,}647 + (10-h)\frac{3574+w}{2} + \text{water area.}$$

It will be noticed that a large change takes place in the datum area between January 3 and January 6. The section of January 6 is shown on the plate accompanying this report in full lines, and that of January 3 by dotted lines. It will be seen by a comparison of these sections that this change is a nearly uniform increase across the section, the increase in mean datum depth being 2.4 feet. It is much to be doubted if such a change in the section really took place. The only note which has any relation to the subject is a statement in the journal that a new lead line was tagged January 5. It is also probable that a heavier lead came into use on January 6, as Assistant Ritter, in his report, states that he used "a 15-pound lead for ordinary stages, and a 20-pound lead for high stages." Whatever may have caused the change in datum area, an inspection of the datum area curve makes it evident either that the cause existed for some time prior to January 3, or else continued for some time after January 6.

Mean depth has been obtained by dividing the water area by the width, and mean datum depth by dividing the datum area by the datum width. Maximum depth has been taken directly from the soundings. Scour and fill have been obtained by taking differences of datum areas, scour being indicated by the positive sign.

Mean velocity has been obtained by dividing the discharge by the water area. During the higher stages of the river the partial discharges belonging to the velocity stations near the right bank approached 100,000 cubic feet per second. A change in the single measured velocity at one of those stations would therefore have a large effect on the total discharge, and it would seem desirable to have a greater number of measurements to determine so large a partial discharge.

The direction of the wind has been given in the notes with reference to the current, but in the tabulation the direction has been given with reference to the points of the compass. The force has been indicated as given in the observer's notes.

A number of slope observations were made by reading gauges on each bank approximately one-half mile above and below the section. As there is no means of determining the relative elevations of these gauges, except the statement that "they were set simultaneously at low water," the slope observations have not been reduced.

Accompanying this report is a plate on which are plotted the velocities, areas, and discharges as abscissas to gauge heights as ordinates, the scales being given on the plate. The mean gauge-readings and the datum areas have also been plotted in chronological order. The section as sounded January 6 is shown on the plate, also as sounded January 3. The gauge-readings, areas, discharges, mean velocities, and datum areas have also been plotted on another plate in chronological order for purposes of inspection and study.

(2) *Observations on Old River.*

Observations were made upon a section of about 2,000 feet below the foot of Turnbull Island. Assistant Ritter states that the section is the same as section H, which was sounded in 1882 by Assistant John Ewens, and in 1883 by Assistant Arthur Owen Wilson. (See Report Miss. River Com'n for 1884, p. 301.)

On the west bank a 300-foot base was measured at right angles to the section, and until January 2, soundings were located by transit angles, measured from the extremity of this base. On January 6 a new position, 280 feet from the section, was taken for the transit, which was used until January 17, when a 500-foot base was measured, also on the west bank, and soundings subsequent to that date located by sextant angles measured to signals at the extremities of this base.

The positions of velocity measurements, after and including January 17, were determined by sextant angles measured to the 500-foot base. The method of locating the velocity stations prior to that date is not stated, their distances from the banks in feet being given in the notes. Five velocity stations were usually occupied for each measured discharge.

The same instruments were used on this section as on the Red River Landing section, and the same coefficients have been used both for reducing registrations of meters to

Discharge observations at Red River Landing, Louisiana.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Oct. 1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	7.65	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	8.29	+0.77	98,926	248,997	27.8	63.4	43.0	3,564	.....	2.530	250,252	Calm.
7	9.50	+1.24	108,509	253,941	30.4	64.7	46.0	3,568	+4,944	2.477	268,829	Do.
8	10.90	+1.46	110,830	251,263	30.9	64.0	47.0	3,582	—2,678	2.626	290,982	Do.
9*	12.70	+1.39	123,685	257,653	34.4	65.7	49.0	3,594	+6,390	2.748	339,900	N., strong.
10	13.60	+1.21	125,408	256,141	34.8	65.3	51.0	3,605	—1,512	2.674	335,268	N., slight.
11	14.60	+0.98	122,934	250,060	34.1	63.7	51.0	3,609	—6,081	2.754	338,529	Do.
12	15.53	+0.83	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	16.10	+0.66	129,189	250,887	35.7	63.9	50.4	3,617	+ 827	2.954	381,627	Do.
14	16.64	+0.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	16.80	+0.14	128,186	247,345	35.4	63.0	51.5	3,620	—3,542	3.079	394,637	Do.
16	16.70	—0.12	131,020	250,542	36.2	63.8	54.0	3,620	+3,197	3.070	402,253	Do.
17	16.40	—0.30	130,262	250,873	36.0	63.9	51.0	3,619	+ 331	2.982	388,460	Calm.
18	16.05	—0.34	127,835	249,714	35.3	63.6	51.0	3,617	—1,159	2.928	374,335	N., slight.
19	15.72	—0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	15.50	—0.26	123,982	247,853	34.3	63.2	50.0	3,614	—1,861	2.963	367,365	S., slight.
21	15.34	—0.12	126,633	251,085	35.0	64.0	52.2	3,614	+3,232	2.979	377,232	Do.
22	15.35	+0.01	124,527	248,943	34.4	63.4	50.0	3,614	—2,142	2.958	368,301	Calm.
23	15.35	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	15.41	+0.04	125,181	249,381	34.6	63.5	49.0	3,615	+ 428	2.925	366,193	N., slight.
25	15.40	+0.01	126,396	250,632	35.0	63.9	52.0	3,615	+1,251	2.923	369,473	S., slight.
26	15.53	+0.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	15.40	—0.10	128,097	252,333	35.4	64.3	52.0	3,615	+1,701	.....	.....	
28	15.18	—0.28	127,010	252,041	35.2	64.2	52.2	3,613	— 292	2.873	364,955	NE., strong.
29	14.87	—0.28	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	14.60	—0.31	125,507	252,636	34.8	64.4	51.5	3,610	+ 595	2.776	348,367	N., brisk.
31	14.25	—0.33	124,094	252,476	34.4	64.3	50.5	3,604	— 160	2.841	352,567	Calm.
Nov. 1	14.00	—0.24	128,237	257,529	35.6	65.6	52.1	3,605	+5,053	2.797	358,613	Do.
2	13.83	—0.16	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	13.80	—0.03	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	13.85	+0.05	126,469	256,302	35.1	65.3	51.2	3,604	—1,227	2,788	352,540	Do.
5†	13.87	+0.03	124,768	254,528	34.6	64.9	51.9	3,604	—1,774	2.751	342,994	NE., ———
6†	13.87	—0.01	124,817	254,581	34.6	64.9	50.9	3,605	+ 53	2.759	344,185	NE., ———
7	13.78	—0.09	121,860	251,950	33.8	64.2	49.0	3,605	—2,631	2.747	334,771	N., ———.
8	13.69	—0.10	123,019†	253,436	34.1	64.6	50.2	3,605	+1,486	2.710	333,298	Calm.
9	13.56	—0.12	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	13.38	—0.20	121,116	252,637	33.6	64.4	50.2	3,599	— 799	2.665	322,701	Do.
11	13.14	—0.26	118,798	251,193	33.0	64.0	48.1	3,600	—1,444	2.670	317,328	Do.
12	12.79	—0.34	117,440	251,089	32.7	64.0	48.0	3,596	— 104	2.721	319,506	S., slight.
13	12.43	—0.37	115,410	250,340	32.1	63.8	47.2	3,590	— 749	2.625	302,905	N., slight.
14	11.98	—0.44	113,908	250,447	31.8	63.8	47.1	3,585	+ 107	2.642	300,964	Do.
15	11.50	—0.47	113,257	251,528	31.6	64.1	47.5	3,584	+1,081	2.553	289,024	Calm.
16	11.04	—0.44	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	10.55	—0.49	110,888	252,567	31.0	64.4	46.0	3,578	+1,039	2.606	288,888	N., slight
18	10.20	—0.41	108,263	251,163	30.3	64.0	44.5	3,569	—1,404	2.606	282,187	N., ———.
19	9.70	—0.46	107,570	252,288	30.2	64.3	45.0	3,569	+1,125	2.428	261,276	N., strong
20	9.30	—0.40	104,620	250,766	29.3	63.9	44.0	3,567	—1,522	2.489	260,341	N., slight.
21	8.97	—0.33	103,304	250,628	29.0	63.9	44.2	3,566	— 138	2.504	258,597	S., slight.
22	8.72	—0.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	8.68	—0.04	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24*	8.38	—0.33	101,260	250,687	28.4	63.9	43.6	3,563	+ 59	2.434	246,502	N., ———.
25*	8.15	—0.20	100,433	250,680	28.2	63.9	43.0	3,561	— 7	2.377	238,553	S., strong.
26	8.02	—0.14	98,963	249,673	27.8	63.6	42.5	3,560	—1,007	2.328	230,397	N., brisk.
27	7.93	—0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28‡	7.89	—0.05	100,029	251,201	28.1	64.0	42.5	3,559	+1,528	2.247	224,746	N., strong
29*	7.77	—0.14	97,589	249,189	27.4	63.5	40.3	3,559	—2,012	2.349	229,218	S., ———.
30	7.61	—0.13	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dec. 1	7.50	—0.12	98,764	251,322	27.8	64.0	41.9	3,555	+2,133	2.396	236,644	S., slight.
2	7.52	+0.03	98,650	251,138	27.7	64.0	42.0	3,556	— 184	2.381	234,911	Calm.
3	7.68	+0.20	98,423	250,343	27.7	63.8	42.2	3,558	— 795	2.360	232,162	S., slight.
4	8.10	+0.40	101,589	252,013	28.5	64.2	43.0	3,560	+1,670	2.496	253,641	S., brisk.
5	8.90	+0.78	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	9.57	+0.67	105,197	250,381	29.4	63.8	44.0	3,574	—1,632	2.443	256,955	W., slight.
7	9.92	+0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	10.01	+0.09	107,135	250,746	29.9	63.9	45.5	3,578	+ 365	2.464	263,908	S., slight.

* River rough. Water rough. ‡ River very rough.

Discharge observations at Red River Landing, Louisiana—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Dec. 9	9.99	—0.03	107,042	250,725	29.9	63.9	45.1	3,578	— 21	2.424	259,264	N., slight.
10	9.82	—0.18	105,672	249,963	29.5	63.7	45.2	3,578	— 762	2.474	261,638	Calm.
11*	9.60	—0.20	106,013	251,090	29.6	64.0	45.1	3,578	+1,127	.....	.....	S., strong.
12*	9.36	—0.31	103,542	249,477	28.9	63.6	45.0	3,576	—1,613	2.475	256,316	NW., strong.
13*	8.69	—0.65	102,393	250,722	28.6	63.9	44.5	3,574	+1,245	2.335	239,130	NE., strong.
14	8.49	—0.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	8.51	+0.02	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	8.02	—0.45	100,232	251,340	28.2	63.9	44.0	3,558	+ 218	2.335	233,899	S., slight.
17	7.66	—0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	7.92	+0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	8.75	+0.80	102,007	250,118	28.6	63.7	44.0	3,569	— 822	2.464	251,268	Calm.
20*	10.00	+1.33	107,205	250,652	29.9	63.9	45.5	3,576	+ 534	2.721	291,182	S., strong.
21	11.87	+1.72	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	13.20	+1.43	118,130	250,324	32.8	63.8	47.0	3,605	— 328	2.811	332,134	W., slight.
23	14.40	+1.20	121,962	249,820	33.8	63.7	49.5	3,611	— 504	2.757	336,310	Calm.
24*	15.25	+0.77	125,763	250,549	34.8	63.8	48.4	3,617	+ 729	2.878	361,994	N., strong.
25	15.77	+0.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26*	16.00	+0.27	128,270	250,347	35.4	63.8	51.2	3,625	— 202	2.732	350,484	N., strong.
27	16.15	+0.11	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	16.30	+0.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	17.05	+0.75	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	18.40	+1.21	136,744	250,105	37.5	63.7	52.5	3,643	— 242	3.080	421,182	S., slight.
31	19.55	+1.26	141,202	250,371	38.7	63.8	55.0	3,646	+ 266	3.179	448,798	N., strong.
1885.												
Jan. 1	20.45	+0.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2*	21.20	+0.93	145,922	249,050	39.9	63.5	57.0	3,660	—1,321	3.318	484,173	N., strong.
3	22.90	+1.77	153,735	250,578	41.9	63.9	58.0	3,667	+1,528	3.395	521,820	N., slight.
4	25.37	+2.22	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	27.57	+2.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	29.45	+2.10	187,786	260,352	50.0	66.3	68.0	3,751	+9,774	.....	.....	W., strong.
7	31.40	+1.84	196,744	261,975	52.4	66.8	69.5	3,758	+1,623	.....	.....	S., slight.
8	32.85	+1.36	202,154	261,922	53.7	66.7	73.0	3,761	— 53	4.087	826,130	E., brisk.
9	34.12	+1.26	204,444	259,441	54.2	66.1	75.0	3,770	—2,481	4.068	831,591	S., strong.
10	35.08	+1.03	209,701	261,073	55.6	66.5	75.1	3,772	+1,632	4.273	896,039	S., slight.
11	36.00	+0.84	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	36.65	+0.65	217,088	262,531	57.5	66.9	77.0	3,778	+1,458	.....	.....	S., slight.
13	37.21	+0.55	218,241	261,569	57.7	66.7	77.0	3,781	— 962	4.449	971,041	N., slight.
14	37.62	+0.42	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	37.94	+0.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	38.75	+0.73	227,277	264,778	60.0	67.5	81.0	3,790	+3,209	.....	.....	NW., strong.
17	39.07	+0.43	225,675	261,964	59.6	66.8	80.0	3,791	—2,814	4.642	1,047,621	N., strong.
18	39.37	+0.27	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	39.68	+0.33	224,236	258,212	59.1	65.8	79.5	3,792	—3,752	4.783	1,072,620	N., slight.
20	39.95	+0.25	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	40.23	+0.30	226,708	258,593	59.8	65.9	81.0	3,793	+ 381	4.855	1,100,586	N., strong.
22	40.52	+0.28	228,193	258,975	60.1	66.0	80.5	3,794	+ 382	4.951	1,129,784	NE., strong.
23	40.90	+0.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	41.16	+0.26	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	41.36	+0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	41.53	+0.17	229,338	256,280	60.1	65.3	82.5	3,815	—2,695	4.882	1,119,520	N., slight.
27	41.67	+0.14	232,798	259,206	61.0	66.1	82.0	3,817	+2,926	4.871	1,133,970	S., slight.
28	41.77	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	41.85	+0.08	228,741	254,462	59.9	64.9	79.0	3,819	—4,744	4.928	1,127,208	SE., strong.
30	41.91	+0.06	230,562	256,053	60.4	65.3	79.2	3,819	+1,591	5.077	1,170,641	S., slight.
31	41.99	+0.08	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Feb. 1	42.00	+0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	42.06	+0.05	228,582	253,500	59.8	64.6	87.0	3,821	—2,553	4.953	1,132,279	Calm.
3	42.06	+0.01	.....	.....	.....	.....	.....	.....	.....	.....	.....	
4	42.08	+0.02	232,520	257,722	60.8	65.7	85.5	3,821	+4,222	5.037	1,171,296	N., slight.
5	42.07	—0.01	236,688	261,568	61.9	66.7	85.5	3,822	+3,846	4.954	1,172,616	N., strong.
6	42.06	—0.01	232,178	257,096	60.8	65.5	87.0	3,822	—4,472	4.896	1,136,794	S., slight.
7	41.97	—0.09	232,287	257,549	60.8	65.6	84.5	3,822	+ 453	4.867	1,130,443	S., brisk.
8	41.77	—0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	41.60	—0.20	229,861	256,536	60.2	65.4	84.5	3,818	—1,013	.....	.....	N., strong.
10	41.37	—0.22	235,300	262,853	61.7	67.0	92.0	3,816	+6,317	4.729	1,112,775	Do.
11	40.95	—0.38	228,958	258,108	60.2	65.8	89.0	3,804	—4,745	4.556	1,043,233	N., slight.
12	40.63	—0.30	229,628	259,995	60.4	66.3	87.0	3,800	+1,887	4.586	1,053,166	N., brisk.
13	40.26	—0.41	.....	.....	.....	.....	.....	.....	.....	.....	.....	
14	39.85	—0.45	223,626	256,956	59.0	65.5	86.0	3,792	—3,039	4.376	978,660	N., slight.

* River rough.

Discharge observations at Red River Landing, Louisiana—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1885.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Feb. 15	39.37	—0.44	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	39.00	—0.42	223,038	259,592	58.8	66.2	86.5	3,792	+2,636	4.227	942,868	S., slight.
17	38.59	—0.40	220,544	258,651	58.2	65.9	87.0	3,788	— 941	4.373	964,477	Do.
18	38.18	—0.38	220,351	260,012	58.2	66.3	88.0	3,788	+1,361	.....	.....	N., strong.
19	37.87	—0.32	212,281	253,117	56.0	64.5	86.0	3,788	—6,895	4.174	885,963	N., brisk.
20	37.67	—0.21	216,454	258,047	57.2	65.8	84.5	3,787	+4,900	4.086	884,464	N., strong.
21	37.42	—0.22	215,384	257,923	56.9	65.7	84.0	3,786	— 124	4.044	871,041	N., brisk.
22	37.25	—0.17	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	37.02	—0.24	212,823	256,875	56.2	65.5	84.0	3,784	—1,048	.....	.....	S., brisk.
24	36.96	—0.07	212,288	256,567	56.1	65.4	86.5	3,784	— 308	4.100	870,440	N., slight.
25	36.90	—0.07	212,514	257,017	56.2	65.5	84.0	3,782	+ 450	4.062	863,257	N., brisk.
26	36.50	—0.37	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	36.07	—0.48	209,791	257,422	55.6	65.6	83.1	3,774	+ 405	3.884	814,860	Calm.
28	35.49	—0.62	207,321	257,138	55.0	65.5	80.9	3,770	— 284	3.827	793,471	Calm.
Mar. 1	34.72	—0.68	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	34.09	—0.72	201,098	256,206	53.4	65.3	81.1	3,769	— 932	3.625	728,987	N., slight.
3	33.25	—0.87	198,416	256,693	52.7	65.4	79.5	3,767	+ 487	3.555	705,305	S., slight.
4	32.26	—0.87	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	31.46	—0.94	190,535	255,561	50.6	65.1	79.1	3,763	—1,132	3.482	663,393	Calm.
6	30.60	—0.80	189,394	257,650	50.4	65.7	79.0	3,759	+2,089	3.366	637,536	N., slight.
7	29.99	—0.62	185,773	256,313	49.5	65.3	77.0	3,756	—1,337	3.435	638,168	Calm.
8	29.36	—0.54	.....	.....	.....	.....	.....	.....	.....	.....	.....	
9	29.01	—0.39	179,167	253,385	47.8	64.6	75.0	3,753	—2,928	3.444	617,082	S., slight.
10	28.73	—0.24	.....	.....	.....	.....	.....	.....	.....	.....	.....	
11	28.61	—0.13	178,599	254,311	47.7	64.8	78.0	3,741	—+926	3.498	624,733	Do.
12	28.67	+0.07	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	28.86	+0.21	176,233	251,019	47.1	64.0	77.5	3,743	—3,292	3.525	621,226	N., slight.
14	29.16	+0.33	179,701	253,354	48.0	64.6	74.1	3,748	+2,335	3.469	623,463	S., slight.
15	29.74	+0.53	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	30.33	+0.59	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	30.94	+0.61	.....	.....	.....	.....	.....	.....	.....	.....	.....	
18	31.48	+0.56	189,873	254,845	50.4	64.9	76.5	3,768	+1,491	3.766	715,087	N., strong.
19	31.95	+0.49	195,578	258,785	51.9	66.0	79.0	3,771	+3,940	3.797	742,687	N., slight.
20	32.40	+0.46	197,955	259,460	52.5	66.1	79.0	3,771	+ 675	3.827	757,562	Do.
21	33.10	+0.56	200,276	259,137	53.1	66.0	80.5	3,772	— 323	3.839	768,839	Calm.
22	33.60	+0.59	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	33.97	+0.38	202,289	257,866	53.6	65.7	82.5	3,774	—1,271	3.848	778,413	N., strong.
24	34.29	+0.37	203,262	257,631	53.8	65.7	84.1	3,775	— 235	4.079	829,005	Calm.
25	34.70	+0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	35.03	+0.33	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	35.32	+0.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	35.41	+0.09	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	35.51	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
30	35.41	—0.09	204,896	255,031	54.2	65.0	84.5	3,777	—2,600	3.933	805,848	N., slight.
31	35.30	—0.12	.....	.....	.....	.....	.....	.....	.....	.....	.....	

Discharge observations in Old River, near Red River Landing, Louisiana.

1884.												
Oct. 8*	17.47	.....	6,426	28,746	11.5	30.2	19.0	558	.....	1.764	11,334	
9	18.75	.....	7,351	28,868	13.1	30.3	19.0	559	+ 122	2.171	15,964	S., strong
10	19.85	.....	8,427	29,363	15.0	30.8	20.0	560	+ 495	2.526	21,287	E., slight.
13	22.40	.....	9,780	29,233	17.3	30.7	22.0	565	— 130	2.966	29,013	N., slight.
15	22.95	.....	10,327	29,463	18.1	30.9	24.0	569	+ 230	3.106	32,086	Calm.
17	22.47	.....	9,788	29,192	17.3	30.7	23.0	566	— 271	2.799	27,395	Do.
22	21.50	.....	9,147	27,129	16.2	30.6	24.0	565	— 63	2.695	24,662	N., light.
25	21.55	.....	9,415	29,395	16.7	30.9	20.0	564	+ 266	2.680	25,304	Calm.
Nov. 1	20.00	.....	8,722	29,528	16.0	31.0	19.1	546	+ 136	2.458	21,440	Do.
7	19.80	.....	7,941	28,866	14.5	30.3	20.5	547	— 662	2.556	20,301	N., slight.
14	18.00	.....	7,158	29,112	13.2	30.6	16.5	544	+ 246	1.990	14,241	Do.
19	15.77	.....	5,743	28,851	11.0	30.3	14.2	522	— 261	1.420	8,158	Do.
21	15.07	.....	5,371	28,813	10.3	30.3	13.7	520	— 8	1.582	8,505	Calm.
24	14.45	.....	4,515	28,301	8.9	29.7	12.4	510	— 542	1.309	5,911	Do.
29	13.85	.....	4,123	28,207	8.2	29.6	11.5	500	— 94	1.242	5,120	S.
Dec. 1	13.61	.....	4,134	28,339	8.3	29.8	11.9	498	+ 132	1.304	5,387	S., slight.
5	15.11	.....	4,902	28,353	9.4	29.8	11.9	519	+ 14	1.669	8,178	Calm.
6	15.75	.....	5,061	28,179	9.8	29.6	14.0	518	— 174	1.741	8,811	S., slight.
8	16.18	.....	5,413	28,307	10.4	29.7	14.0	520	+ 128	1.606	8,687	Calm.

* From Mississippi River.

Discharge observations at Red River Landing, Louisiana—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Dec. 10	15.95	.....	5,498	28,512	10.6	29.9	14.8	519	+ 205	1.473	8,101	S., slight.
12	15.45	.....	5,249	28,519	10.4	30.0	14.0	507	+ 7	1.263	6,635	N., slight.
13	14.86	.....	4,913	28,487	9.7	29.9	13.0	508	— 32	1.166	5,734	N., strong.
16*	14.31	.....	4,456	28,306	8.9	29.7	11.5	500	— 181	.....	.....	S., slight.
17*	14.08	.....	4,198	28,152	8.4	29.6	10.5	497	— 144	.....	.....	Calm.
19†	15.27	.....	5,202	28,568	10.1	30.0	13.0	516	— 406	0.961	5,002	Do.
20	16.52	.....	5,563	28,319	10.4	29.7	15.0	533	— 249	1.416	7,878	S., strong.
22	19.71	.....	7,729	28,693	14.2	30.1	18.4	543	+ 374	1.870	14,446	W., brisk.
23	20.83	.....	8,218	28,549	15.0	30.0	20.0	548	— 144	1.812	14,891	N., slight.
24	21.55	.....	8,901	28,829	16.1	30.3	19.8	554	+ 280	1.744	15,523	N., strong.
26	22.28	.....	8,814	28,332	15.7	29.7	20.5	562	— 497	1.467	12,929	N., slight.
30	24.73	.....	10,867	28,975	18.0	30.4	22.9	602	+ 643	3.676	39,956	S., strong.
31	26.45	.....	11,961	29,024	19.6	30.5	27.0	611	+ 49	5.289	63,271	N., strong.
1885.												
Jan. 2	28.25	.....	12,493	28,490	20.0	29.9	30.0	625	— 534	5.349	66,829	N., slight.
6	36.25	.....	18,103	28,412	27.7	29.8	35.9	654	— 78	1.520	27,514	W., strong.
7	37.58	.....	19,280	28,901	28.4	30.4	36.9	680	+ 489	0.871	16,786	Calm.
10†	41.47	.....	22,970	29,427	27.5	30.9	41.8	834	+ 526	0.880	20,220	S., slight.
14	43.88	.....	26,435	31,144	29.8	32.7	44.0	900	+1,717	0.767	20,580	Do.
17	45.31	.....	25,260	28,211	26.3	29.6	42.0	960	—2,933	1.137	28,725	Do.
19	45.91	.....	26,870	29,250	28.0	30.7	43.5	960	+1,039	0.841	22,596	S., strong.
23*	47.12	.....	27,930	29,158	29.1	30.6	44.0	960	— 92	.....	.....	Calm.
27‡	47.98	.....	29,964	30,373	31.4	31.9	45.0	955	+1,215	1.121	33,575	N., strong.
29	48.19	.....	29,661	29,870	31.1	31.4	45.1	955	— 503	0.743	22,038	N., slight.
Feb. 3	48.41	.....	28,890	28,890	30.3	30.4	46.0	952	— 980	1.061	30,639	Do.
5	48.38	.....	27,515	27,544	28.9	28.9	45.0	952	—1,346	1.191	32,787	N., strong.
10	47.60	.....	28,587	29,358	30.3	30.8	47.0	945	+1,814	1.556	44,501	S., strong.
18	44.55	.....	26,778	30,453	28.1	32.0	44.0	952	+1,095	2.869	76,846	Do.
23	43.40	.....	24,581	29,329	27.9	30.8	41.0	882	—1,124	2.318	56,979	N., slight.
25	43.22	.....	24,693	29,604	28.2	31.1	41.0	877	+ 275	2.166	53,504	S., slight.
27	42.38	.....	24,929	30,603	28.7	32.1	41.5	870	+ 999	2.819	70,283	Calm.
Mar. 5	37.71	.....	21,004	30,698	25.3	32.2	37.5	830	+ 95	4.719	99,125	Do.
7	36.31	.....	19,204	30,063	23.2	31.6	36.5	838	— 635	5.069	97,354	S., slight.
18	38.02	.....	20,212	29,655	24.1	31.1	36.5	838	— 408	0.733	14,823	Calm.
19	38.41	.....	19,882	28,996	23.8	30.5	36.0	835	— 659	0.385	7,652	Do.
23†	40.30	.....	21,384	28,905	25.3	30.4	38.5	844	— 91	0.780	16,685	S., strong.
27	41.55	.....	22,547	28,966	26.2	30.4	38.0	861	+ 61	1.144	25,787	N., brisk.
28	41.60	.....	22,291	28,665	25.9	30.1	37.5	861	— 301	1.110	24,751	Do.
30	41.70	.....	22,231	28,517	25.7	30.0	39.5	864	— 148	1.055	23,458	Calm.
31	41.55	.....	21,799	28,218	25.3	29.6	38.5	861	— 299	0.936	20,412	N., slight.

* No current. † From Mississippi River. ‡ Toward Mississippi River.

Discharge observations at head of Atchafalaya River.

Date.	Gauge reading.		Dimensions of cross-section of discharge.					Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
			Area.		Depth.							
	At section.	At Barbres, +1.1 feet.	Water.	Below datum.	Mean.	Mean datum.	Maximum.					
1885.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Jan. 31	87.00	42.6	37,357	37,453	43.0	43.0	86.0	869	.....	.....	.....	N., slight.
Feb. 3	87.11	42.7	36,564	36,564	42.0	42.0	84.5	871	— 889	5.317	194,416	S., slight.
6	87.08	42.7	37,156	37,182	42.7	42.7	82.0	870	+ 618	5.715	212,344	E., slight.
14	85.12	40.7	36,054	37,780	41.7	43.4	83.0	864	+ 598	4.943	178,204	S., slight.
19	83.33	38.9	35,350	38,620	41.2	44.3	82.0	859	+ 840	5.298	187,290	N., brisk.
26	82.04	37.6	33,297	37,617	40.0	43.2	85.1	833	—1,003	4.537	151,075	N., slight.
Mar. 10	75.75	31.1	27,262	36,674	34.7	42.1	73.1	786	— 943	3.916	106,746	Calm.
20	77.68	33.1	29,753	37,599	37.5	43.2	75.1	793	+ 925	4.342	129,200	E., slight.

(*f*) CARROLLTON, LOUISIANA.

SAINT LOUIS, *November* 2, 1886.

CAPTAIN: I have the honor to submit the following report upon the final reduction of discharge observations made on the Mississippi River at Carrollton, La., between October 8, 1884, and March 28, 1885.

The party at this station was under the direction of Assistant Engineer M. K. Bowen. Mr. J. O. Hasam acted as recorder throughout the season. A steam engineer and two boatmen completed the party.

Observations were made upon a section, which a sketch sent to this office by Mr. Bowen shows to have been about 1,800 feet below the Cambronne Sections used in 1879 and 1880. There is nothing in the notes which locates the section more definitely. The ends of the section were marked by signals, and along the right bank a series of signals at right angles to the section were set to locate positions on the section by means of a sextant set at the constant angle of 14° 02′. (For further explanation of this method of location, see Report Mississippi River Commission for 1883, page 181.)

The instruments in use at this station consisted of Price meter No. 6, a Morse register, a break-circuit clock, electric batteries, transit, level, sextant, sounding leads and lines, etc. (The instruments and manner of using them were similar to those at Helena, which have already been described in my report on the reduction of work at that station.)

The coefficients to be used in reducing registrations of the meter to velocity in feet per second depend upon two determinations made February 4 and 20, 1885. In his reports to the office of work performed, Mr. Bowen states that a third rating was made October 3, 1884, in Harvey's Canal, but the notes of this rating are not given in the note-books, and the results obtained are not known. The ratings were made in still water and have been reduced in the usual manner.

The following table contains the results of the ratings used:

Date.	No. of observations.	*a*.	*b*.	Mean error of observation.	Mean error of *a*.	Mean error of *b*.
February 4, 1885	15	+ 3.910	+ 0.184	± 0.138	± 0.044	± 0.060
February 20, 1885	13	+ 4.020	+ 0.250	± 0.082	± 0.039	± 0.042

In reducing the observed velocities in the discharge measurements the arithmetical means of the values of *a* and *b* have been adopted and the equation between the variables becomes

$$y = 3.965\,x + 0.217.$$

In this equation, x = number of registrations per second, and y = velocity in feet per second. These values have been used throughout the entire series of observations. The counting of registrations of the meter had been done in the field, and the results were adopted in the office reduction. The launch was not anchored in measuring velocities at this station. The computation of velocities as far as possible was made by means of tables prepared for the purpose, but the labor of computation was largely increased by the irregularity in times of the observations.

Up to October 29 observations for velocity were made at mid-depth, and subsequent to that date at six-tenths the depth from the surface. The observations at mid-depth have been reduced to correspond to those taken at six-tenth depth by dividing the discharge by the coefficient 1.035, that being the relation obtained by Assistant W. G. Price, in 1883, between velocities at those depths at this station. (See observations taken from July 1 to September 7, Report Mississippi River Commission for 1883, page 472.) Velocities were measured at points on the cross-section 120 feet apart, except near the banks and near the middle of stream where the points were 80 and 100 feet apart. The manner of locating the velocity stations is not stated.

The soundings were taken at irregular intervals, and were located by the series of signals on the right bank. In the field two sets of note-books had been kept, one of which contained the original notes in a very confused condition, while in the other the notes had been copied in the order of their dates. In the original notes the lead-line corrections are given, but in the copied notes the corrections had been applied to the soundings. The application of these corrections has been examined on many dates and found to have been correctly made. The reduction has been made from the second set of notes, but even in these many of the figures were scarcely legible.

The soundings have been plotted on a horizontal scale of 1 inch = 200 feet, and a vertical scale of 1 inch = 20 feet and the cross-sections drawn. Depths were then scaled off at the points of velocity measurements and at points midway between them. Near the banks actual soundings were taken in sufficient number to give the end areas with necessary accuracy. As by this method of computation the depths were not at regular intervals and the areas could not be checked by computing the total area from the sum of the soundings, it was decided to perform the computation in duplicate. The computation of areas and discharges were made in the usual manner, and the results of the two computations made to agree. All differences were examined and errors corrected. Many of the differences came from a different interpretation of the notes. Some of these differences could be settled by reference to the original notes, but such as could not were settled arbitrarily. In some few instances the notes have been corrected arbitrarily where they were evidently largely in error.

On a large number of days velocities were observed but no soundings were taken. There seems to have been no good reasons for this, as on many days the notes show that the weather was fair and suitable for work, while the velocity measurements occupied but one or two hours' time. These observations were omitted until the others had been reduced and the datum areas computed. It was then decided to interpolate depths for those days when soundings were not taken. The interpolations have been made on the supposition that the change in datum areas, or the change in the bed of the stream, has been proportional to the time. Allowance has also been made for variations in stage.

Let h', h and h'' be gauge-readings on three dates;
x' and x'' scaled depths at a point on the cross-section on the first and last dates;
n = number of days between first and last dates;
and, m = number of days between first and second dates.

Then the required depth, x, at the same point on the second date has been obtained by the formula,

$$x = x' + h - h' + \frac{m}{n}(x'' - x') + \frac{m}{n}(h' - h'')$$

In this manner depths have been interpolated for 39 dates, the labor of making the interpolations probably exceeding what would have been necessary to have observed the depths originally in the field. The time occupied in sounding the section varied from forty minutes to two hours. The discharges for these dates have then been computed in the usual manner.

The results of the computation are given in the tabulation accompanying this report. The gauge-readings for days on which areas were measured or interpolated were taken directly from the observer's notes and correspond to the mean time of observations. The readings for other days have been taken from the regular gauge record at Carrollton, which is taken at 8 a. m. There are some discrepancies between the gauge-readings at this station as taken by the regular observer and as taken by the discharge party, although it is supposed that both read the standard gauge. The change in twenty-four hours has been taken from the regular record, as the discharge party did not read the gauge at regular hours and sometimes omitted reading it altogether.

Datum areas have been computed in the following manner: Datum was assumed to correspond to the gauge-reading, 13.54 feet, observed January 31, 1885, and datum width was taken as 2,562 feet. The banks were supposed to have uniform slopes below the gauge-reading 8 feet, between 8 and 12 feet, and between 12 and 13.54 feet. Width at a stage of 12 feet was taken as 2,375 feet, and at 8 feet as 2,250 feet.

Between 12 and 13.54 feet on the gauge—

$$\text{Datum area} = (13.54 - h)\,\frac{2562 + w}{2} + \text{water area.}$$

Between 8 and 12 feet on the gauge—

$$\text{Datum area} = (13.54 - 12)\,\frac{2562 + 2375}{2} + (12 - h)\,\frac{(2375 + w)}{2} + \text{water area.}$$

$$= 3801 + (12 - h)\,\frac{2375 + w}{2} + \text{water area.}$$

Below 8 feet on the gauge—

$$\text{Datum area} = 3801 + (12 - 4)\,\frac{2375 + 2250}{2} + (8 - h)\,\frac{2250 + w}{2} + \text{water area.}$$

$$= 13051 + (8 - h)\,\frac{2250 + w}{2} + \text{water area.}$$

In the above formulæ h represents gauge-reading and w observed width.

Mean depth has been obtained by dividing the observed area by the observed width. Mean datum depth has been obtained by dividing the datum area by the datum width. Maximum depth has been taken directly from the soundings. Scour or fill has been obtained by taking differences of datum areas. Scour has been indicated by the positive sign.

Mean velocity has been obtained by dividing the discharge by the area. As has been noticed at the other stations already reduced the variations in mean velocities come mainly from the measured velocities, and are relatively much greater than the variations in areas. As the area and mean velocity are the factors making up the discharge, and as the variations in area are small in comparison with those in mean velocity, it is evident that areas could be interpolated at this station and still give valuable results for discharge since the more variable factor had been observed. There are some variations in areas however which are quite large, the change in mean datum depth from February 10 to February 12 being 4.1 feet, or about one-fourth the total oscillation of stage at Carrollton. Had the area on February 11 been observed, instead of interpolated, valuable information might have been gained as to this large change in area. The plotted cross-sections show that the change extended throughout the width of the cross-section.

The direction of the wind is indicated by dividing the horizon into 12 parts and numbering the parts the same as the hours on a clock dial, XII being up-stream and indicating a down-stream wind. The force of the wind is not well defined and is given in the tabulation as contained in the notes.

Slope observations consisted of a number of readings of gauges 1 mile apart. In a sketch in the notes the gauges are shown on each side of the river, but on only one day has slope been observed on both sides of the river, and on only two days has it been indicated on which bank slope was observed. The slope has been given in the tabulation as if taken on the left bank on the theory that it would have been easier to observe on that bank, and hence more likely to have been taken there. The observations usually consisted of five readings of the upper and lower gauge, but the manner of reading them is not given. The slope is given in the table in terms of the seventh place of decimals.

Accompanying this report is a plate, on which are plotted the mean velocities, areas, and discharges as abscissas to gauge heights as ordinates, the scale for each system of co-ordinates being given in the plate. Interpolated areas have not been plotted. The gauge-readings and datum areas have been plotted in chronological order. The section as sounded February 2, 1885, is also shown on the plate.

The gauge-readings, areas, datum areas, mean velocities, and discharges have also been plotted in chronological order on another plate for purposes of study and inspection. The scale is too large to admit of reproduction of the plate.

Very respectfully, your obedient servant,

L. L. WHEELER,
In charge Computing Division.

Capt. THOMAS TURTLE,
Corps of Engineers, U. S. Army,
Secretary Mississippi River Commission.

Discharge observations at Carrollton, La.

Date.	Gauge.		Dimensions of cross-section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1884.	*Feet.*	*Feet.*	*Sq. ft.*	*Sq. ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. ft.*	*Feet.*	*Cu. ft.*	
Oct. 8	1.70	+0.20	150,545	177,699	67.6	69.4	123.6	2,227	.....	1.965	295,766	VII, fresh.
9	2.08	+0.40	152,695	179,010	68.4	69.9	120.0	2,231	+1,311	2.095	319,953	V, light.
10	2.92	+0.50	152,300	176,730	68.3	69.0	122.9	2,230	−2,280	2.318	353,026	IV, light.
11	3.11	+0.30	155,196	179,203	69.6	69.9	124.6	2,231	+2,473	2.182	338,671	VI, light.
12	3.50	+0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
13	3.60	+0.10	156,992	179,899	70.4	70.2	121.6	2,230	+ 696	2.415	379,151	VII, light.
14	3.69	+0.10	158,039	180,749	70.8	70.6	123.4	2,232	+ 850	2.478	391,702	VII, fresh.
15	3.55	−0.15	.....	.....	.....	.....	.....	.....	.....	.....	.....	
16	3.02	+0.15	155,495	178,357	69.7	69.6	123.1	2,230	−2,392	2.573	400,030	V, fresh.
17	3.24	−0.40	155,223	178,936	69.6	69.8	125.5	2,230	+ 579	2.566	398,360	XII, light.
18	3.03	−0.20	153,812	177,993	69.0	69.5	120.6	2,229	− 943	2.546	391,583	XI, light.
19	2.90	−0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
20	3.09	+0.10	154,845	178,894	69.4	69.8	123.0	2,230	+ 901	2.427	375,855	Calm.
21	3.09	+0.10	157,535	181,586	70.6	70.9	126.1	2,231	+2,692	2.572	405,127	VIII, light.
22	3.16	+0.20	156,457	.....	.....	.....	.....	2,231	.....	2.510	392,774	VII, light.
23	3.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	3.55	+0.30	154,856	177,882	69.3	69.4	123.2	2,233	−3,704	2.558	396,187	XII, light.
25	3.29	−0.20	154,404	178,010	69.2	69.5	121.8	2,232	+ 128	2.676	413,180	VIII, slight.
26	3.60	+0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
27	3.78	+0.30	156,319	178,829	70.0	69.8	124.0	2,233	+ 819	2.398	374,912	Calm.
28	3.50	−0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	3.50	.....	156,102	179,237	69.9	70.0	123.2	2,232	+ 408	2.244	350,272	VIII, light.
30	3.11	−0.40	155,143	.....	.....	.....	.....	2,232	.....	2.327	361,015	VII, light.
31	2.83	−0.20	153,938	178,575	69.0	69.7	121.8	2,232	− 662	2.281	351,133	VII, fresh.
Nov. 1	2.62	−0.30	151,196	176,304	67.7	68.8	120.2	2,232	−2,271	2.335	353,058	XII, light.
2	2.40	−0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
3	2.43	.....	152,415	177,940	68.4	69.5	120.6	2,229	+1,636	2.261	344,565	VII, light.
4	2.39	−0.10	152,542	178,159	68.4	69.5	117.7	2,230	+ 219	2.268	346,029	V, light.
5	2.55	+0.10	153,368	.....	.....	.....	.....	2,230	.....	2.181	334,488	VI, light.
6	2.47	+0.40	153,720	179,158	68.9	69.9	121.6	2,230	+ 999	2.266	348,313	Do.
7	2.55	−0.10	153,926	179,185	69.0	69.9	122.3	2,230	+ 27	2.435	374,863	VII, light.
8	2.46	+0.10	153,134	.....	.....	.....	.....	2,230	.....	2.184	334,449	Do.
9	2.40	−0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
10	2.22	−0.10	151,447	177,439	68.0	69.3	122.8	2,228	−1,746	2.120	321,115	IX, light
11	2.19	−0.10	151,915	.....	.....	.....	.....	2,228	.....	2.184	331,727	VI, light.
12	2.19	.....	152,408	.....	.....	.....	.....	2,228	.....	1.919	292,489	VII, light.
13	2.07	−0.10	152,565	178,896	68.4	69.8	121.9	2,229	+1,457	2.028	309,472	IV, light.
14	1.96	−0.10	151,200	177,772	67.9	69.4	121.4	2,227	−1,124	1.988	300,575	V, light.
15	1.77	−0.30	152,306	179,301	68.4	70.0	120.5	2,227	+1,529	1.981	301,670	VII, light.
16	1.30	−0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
17	1.42	−0.10	151,354	179,128	68.0	69.9	122.2	2,225	− 173	1.982	300,001	X, light.
18	1.46	+0.20	153,653	181,337	69.1	70.8	122.0	2,225	+2,209	1.933	297,051	VII, light.
19	1.26	−0.10	151,754	179,886	68.2	70.2	122.0	2,225	−1,451	1.946	295,250	VII, fresh.
20	1.17	.....	151,351	.....	.....	.....	.....	2,225	.....	1.890	285,999	VIII, light.
21	1.06	−0.10	150,874	179,436	68.0	70.0	121.9	2,220	− 450	1.795	270,826	X, light.
22	1.50	+0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	1.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	1.44	−0.20	152,067	179,799	68.3	70.2	122.1	2,226	+ 363	1.767	268,682	VIII, strong.
25	1.20	−0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	1.35	+0.10	153,082	181,009	68.8	70.7	120.3	2,224	+1,210	1.653	253,029	VII, fresh.
27	1.38	.....	153,240	.....	.....	.....	.....	2,224	.....	1.612	246,968	IX, light.
28	1.40	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	0.80	−0.50	152,250	181,393	68.6	70.8	121.9	2,220	+ 384	1.831	278,770	XI, fresh.
30	0.55	−0.35	.....	.....	.....	.....	.....	.....	.....	.....	.....	
Dec. 1	0.39	−0.15	150,086	180,145	67.6	70.3	116.9	2,221	−1,248	1.712	256,922	
2	0.34	−0.10	149,099	179,270	67.2	70.0	119.4	2,220	− 875	1.790	267,822	I, fresh.
3	0.54	+0.10	149,808	179,532	67.5	70.1	118.4	2,220	+ 262	1.755	262,916	XI, light.
4	0.50	+0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	1.16	−0.20	152,363	181,222	68.7	70.8	119.7	2,226	+1,690	1.784	272,753	X, fresh.
6	1.81	+0.30	154,034	181,774	69.6	71.0	121.9	2,227	+ 552	2.015	312,128	IX, slight.
7	1.50	+0.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	
8	1.35	−0.10	152,779	180,709	68.7	70.5	119.4	2,225	−1,065	1.885	287,947	Calm.
9	1.30	+0.05	152,592	.....	.....	.....	.....	2,235	.....	1.874	285,976	VI, light.
10	1.50	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	
11	1.40	−0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	1.45	+0.10	152,700	180,403	68.7	70.4	123.2	2,224	− 306	1.870	285,606	V, slight.
13	1.12	−0.40	152,063	.....	.....	.....	.....	2,223	.....	1.737	264,130	VII, strong.
14	1.10	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
15	1.03	0.00	151,982	180,625	68.3	70.5	119.6	2,224	+ 222	1.703	258,873	VI, light.
16	0.69	−0.30	150,217	179,617	67.6	70.1	121.0	2,223	−1,008	1.950	292,877	X, strong.
17	0.65	−0.10	149,616	.....	.....	.....	.....	2,223	.....	1.734	259,412	III, light.

Discharge observations at Carrollton, La.—Continued.

Date.	Gauge.		Dimensions of cross-section of discharge.									
			Area.		Depth.							
	Reading.	Rise or fall in the preceding 24 hours.	Water.	Below datum.	Mean.	Mean datum.	Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.
1884.	*Feet.*	*Feet*	*Sq. Ft.*	*Sq. Ft.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Sq. Ft.*	*Feet.*	*Cu. ft.*	
Dec. 18	0.70	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	0.56	—0.20	148,437	178,127	66.8	69.5	120.0	2,223	—1,490	1.801	267,338	IV, light.
20	0.50	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
21	1.10	+0.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	
22	2.20	+0.40	152,892	178,932	68.6	69.8	121.5	2,229	+ 805	2.244	343,021	I, light.
23	2.47	+1.00	154,674	180,115	69.3	70.3	123.2	2,231	+1,183	2.109	326,140	VI, light.
24	2.70	+0.20	154,598	179,524	69.3	70.1	122.3	2,231	— 591	2.216	342,625	VII, fresh.
25	2.88	+0.20	155,577	.....	.....	.....	.....	2,231	.....	2.297	357,330	VII, light.
26	2.89	0.00	156,452	180,952	70.1	70.6	122.8	2,231	+1,428	2.473	386,902	
27	3.20	+0.30	.....	.....	.....	.....	.....	.....	.....	.....	.....	
28	3.40	+0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	
29	3.79	+0.05	159,575	.....	.....	.....	.....	2,234	.....	2.737	436,828	Very strong.
30	3.87	+0.10	159,799	182,109	71.5	71.1	123.5	2,234	+1,157	.....	.....	Strong.
31	4.11	+0.50	159,464	.....	.....	.....	.....	2,235	.....	2.821	449,884	V, strong.
1885.												
Jan. 1	4.50	+0.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	
2	4.87	+0.50	159,880	179,958	71.4	70.2	126.4	2,240	—2,151	3.022	483,173	VII, light.
3	5.26	0.00	161,110	.....	.....	.....	.....	2,241	.....	3.030	488,222	Do.
4	6.85	+1.85	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5	7.95	+1.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
6	8.00	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	
7	8.43	+0.35	169,231	181,357	73.9	70.8	129.9	2,289	+1,399	4.274	723,261	V, light.
8	9.14	+0.65	170,816	.....	.....	.....	.....	2,292	.....	4.311	736,396	
9	9.87	+1.00	172,680	181,467	74.8	70.8	130.2	2,307	+ 110	4.651	803,092	Calm.
10	10.38	+0.40	173,463	.....	.....	.....	.....	2,308	.....	4.767	826,925	Do.
11	11.00	+0.60	.....	.....	.....	.....	.....	.....	.....	.....	.....	
12	11.19	+0.45	174,619	180,344	73.5	70.4	135.5	2,375	—1,123	4.925	860,001	Do
13	11.50	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	
14	11.67	+0.25	177,289	181,874	74.6	71.0	135.3	2,375	+1,530	5.083	901,073	
15	11.93	+1.05	177,643	.....	.....	.....	.....	2,375	.....	4.984	885,404	
16	12.42	+0.05	178,505	.....	.....	.....	.....	2,375	.....	5.202	928,512	
17	12.15	+0.15	177,458	180,889	74.7	70.6	133.1	2,375	— 985	5.228	927,678	
18	12.55	—0.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	
19	12.47	—0.05	176,933	179,628	71.5	70.1	136.8	2,475	—1,261	.....	.....	
20	12.78	+0.10	180,045	.....	.....	.....	.....	2,475	.....	5.396	971,539	V, strong.
21	12.95	+0.05	181,756	183,242	71.7	71.5	135.4	2,476	+3,614	5.363	974,809	Strong.
22	13.55	—0.10	.....	.....	.....	.....	.....	.....	.....	.....	.....	
23	13.55	0.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	
24	13.15	—0.40	.....	.....	.....	.....	.....	.....	.....	.....	.....	
25	13.20	+0.05	.....	.....	.....	.....	.....	.....	.....	.....	.....	
26	13.22	+0.05	179,432	180,247	70.8	70.3	135.8	2,532	—3,115	5.572	999,808	VII, light.
27	13.29	+0.05	179,643	.....	.....	.....	.....	2,532	.....	5.727	1,028,833	X, strong.
28	13.40	+0.04	180,208	180,561	72.6	70.5	136.6	2,482	+ 434	5.786	1,042,608	VII, light.
29	13.44	+0.06	178,758	.....	.....	.....	.....	2,545	.....	5.827	1,041,714	IX, fresh.
30	13.44	0.00	177,238	.....	.....	.....	.....	2,545	.....	5.887	1,043,383	VIII, fresh.
31	13.54	+0.03	176,554	176,554	68.9	68.9	143.5	2,562	—4,007	5.748	1,014,887	Calm.

Discharge observations at Carrollton, La.—Continued.

Date.	Gauge. Reading.	Gauge. Rise or fall in the preceding 24 hours.	Dimensions of cross-section of discharge. Area. Water.	Area. Below datum.	Depth. Mean.	Depth. Mean datum.	Depth. Maximum.	Width.	Scour or fill.	Mean velocity per second.	Discharge per second.	Direction and force of wind.	Slope. Sin. of inclination. R. bank.	L. bank.
1885.	Ft.	Feet.	Sq. ft.	Sq. ft.	Ft.	Ft.	Ft.	Ft.	Sq. ft.	Ft.	Cu. ft.			
Feb. 1	13.46	+0.03												
2	13.54	+0.01	178,777	178,777	70.2	69.8	143.1	2,548	+ 2,223	6.163	1,101,671	Calm		
3	13.59	—0.01	178,655					2,549		5.862	1,047,271	II, light		
4	13.42	—0.04												
5	13.42	0.00												
6	13.45	0.00	177,737					2,532		5.723	1,017,242	Calm		
7	13.37	0.00	177,656	178,089	70.2	69.5	147.2	2,532	— 688	5.854	1,039,936	XII, strong		812
8	13.44	+0.02												
9	13.47	+0.03												
10	13.24	—0.02	174,052	174,814	69.1	68.2	131.0	2,517	— 3,275	5.687	989,860	VI, light		
11	13.01	—0.03	178,225					2,517		5.610	999,786	VIII, light	337	350
12	13.15	0.00	184,203	185,192	73.3	72.3	141.5	2,512	+10,378	5.371	989,422	VII, light		
13	12.97	0.00	183,733					2,511		5.334	980,086	VI, strong	384	
14	13.00	—0.02	183,610	184,977	73.4	72.2	140.5	2,500	— 215	5.207	956,076	V, light		356
15	12.38	—1.02												
16	12.56	—0.03	184,502	186,968	74.7	73.0	134.2	2,470	+ 1,991	5.038	929,595	V, light		417
17	12.32	—0.03												
18	12.28	0.00	185,072	188,236	75.2	73.5	131.2	2,460	+ 1,268	4.871	901,524	VII, fresh		
19	12.24	—0.02	181,545					2,460		4.869	883,999	Calm		458
20	12.12	0.00	177,936	181,495	72.6	70.8	133.0	2,451	— 6,741	4.781	850,662	VIII, light		441
21	12.09	—0.04	177,789					2,450		4.572	812,829	IX, strong		379
22	12.00	—0.26												
23	12.05	—0.22	177,528	181,257	72.6	70.7	127.0	2,444	— 238	4.597	816,183	VIII, light		440
24	12.00	+0.22												455
25	11.92	—0.22	179,658	183,652	73.7	71.7	133.6	2,439	+ 2,395	4.714	846,842	VI, slight		455
26	11.81	—0.02	178,018	182,271	74.7	71.1	132.8	2,386	— 1,381	4.562	812,161	V, light		477
27	11.74	—0.43	178,205					2,383		4.539	808,796	Calm		455
28	11.41	+0.02	177,819	183,021	74.9	71.5	131.3	2,373	+ 750	4.607	819,219	II, fresh		466
Mar. 1	11.33	—0.02												
2	11.15	—0.13	171,262	177,078	72.3	67.1	136.4	2,368	— 5,943	4.340	743,347	V, light		468
3	10.83	—0.30	169,768					2,366		4.226	717,520	I, light		407
4	10.71	—0.12	169,729					2,365		4.021	682,522	VII, light		
5	10.30	—0.43	168,937					2,363		3.939	665,494	IV, light		
6	9.92	—0.40	168,257	176,979	71.4	69.1	132.4	2,357	— 99	4.047	680,911	VII, light		
7	9.53	—0.45	166,925					2,352		3.909	652,477	III, light		386
8	9.10	—0.40												
9	8.86	—0.25	164,168	175,364	70.3	68.4	127.1	2,335	— 1,615	3.887	638,154	VIII, fresh		394
10	8.70	—0.12	163,671	175,237	70.2	68.4	126.3	2,331	— 127	3.797	621,445	Calm		201
11	8.68	—0.03	163,042					2,330		3.835	625,187	X, fresh		337
12	8.69	0.00	162,563	174,152	70.2	68.0	127.0	2,331	— 1,085					379
13	8.72	+0.03	162,134					2,331		3.791	614,578	Calm		312
14	8.81	+0.12	161,800	173,105	69.4	67.6	127.0	2,330	— 1,047	3.810	616,389	Calm		368
15	9.10	+0.25												
16	9.45	+0.25	163,598					2,335		3.965	648,655	Calm		373
17	9.56	+0.22	164,048	173,598	70.2	67.8	128.6	2,337	+ 493	4.053	664,921	Calm		381
18	9.74	+0.23	166,082	175,205	71.1	68.4	130.2	2,335	+ 1,607	4.019	667,494	VI, slight		
19	9.92	+0.15	165,329					2,336		4.138	684,087	III, light		358
20	10.16	+0.25	164,618	172,754	70.4	67.4	130.7	2,337	— 2,451	4.103	675,413	III, light		349
21	10.60	+0.25	165,709							4.284	709,905	IX, fresh		
22	10.70	+0.25												
23	10.72	0.00	166,471	173,308	70.2	67.7	134.4	2,370	+ 554	4.358	725,498	VII, light		
24	10.90	0.00	166,153	172,568	69.9	67.4	130.7	2,377	— 740	4.452	739,772	IX, fresh		352
25	11.00	+0.28	166,104	172,281	69.9	67.2	129.7	2,377	— 287	4.450	739,078	X, light		345
26	11.20	+0.22												318
27	11.45	+0.25												341
28	11.50	+0.07	169,617	174,606	71.3	68.1	131.5	2,378	+ 2,325					345
29	11.52	+0.00												
30	11.52	+0.00												
31	11.40	—0.12												

A 5.

Elevations of high waters.

Locality.	Distance.	1858.	1862.	1867.	1874.	1876.	1880.	1882.	1883.	1884.	1886.	1887.
	Miles.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
Cairo	.....	341.40	342.71	341.81	338.21	337.22	335.44	342.71	343.01	342.63	341.86	339.42
Columbus	21.2	329.77	330.92	330.44	.....	.....	326.31	331.93	332.42	332.22	332.02	330.13
Salmon's Landing	33.6	.....	.....	325.56	.....	.....	322.13	326.90	327.23	327.15	326.30	.....
Morrison's Landing	68.9	.....	315.24	.....	.....	.....	310.74	317.29	317.54	317.54	316.44	312.81
Cottonwood Point	123.3	288.68	288.68	288.09	.....	.....	286.00	288.18	288.47	287.96	287.71	.....
Fulton	175.4	.....	.....	.....	.....	.....	262.72	265.22	264.84	264.28	263.97	263.15
Memphis	230.3	238.13	238.42	238.82	237.97	238.05	237.38	239.12	238.72	238.12	238.77	239.27
Mhoons Landing	275.8	.....	.....	.....	.....	.....	217.58	221.28	221.68	220.36	220.45	.....
Helena	306.5	206.58	208.37	207.79	207.77	206.82	205.66	209.17	208.88	208.98	210.08	208.28
Delta	314.4	203.86	.....	.....	203.34	203.10	201.89	204.39	203.97	.....	.....	.....
White River	394.4	.....	.....	175.53	175.33	175.43	275.28	177.13	176.57	176.47	176.93	176.48
Riverton	399.6	172.34	173.32	171.49	172.45	172.78	172.34	174.48	174.06	173.98	.....	174.17
Arkansas City	438.3	.....	.....	.....	.....	.....	161.52	163.45	162.57	162.71	163.11	163.00
Greenville	478.5	151.00	.....	147.92	148.92	149.28	148.41	149.72	148.40	149.10	149.20	148.93
Lake Providence	542.3	.....	130.50	128.93	127.00	127.58	126.86	127.94	126.10	128.03	127.54	127.62
Vicksburg	599.2	112.94	117.14	115.06	111.74	110.94	109.19	114.79	109.84	115.04	110.19	110.74
Saint Joseph	647.7	.....	.....	.....	.....	.....	94.04	96.87	93.87	97.65	.....	.....
Natchez	700.4	85.08	82.01	84.76	82.44	80.69	79.95	84.43	80.84	84.24	80.59	81.03
Red River Landing	765.3	.....	.....	70.18	70.85	69.26	67.90	72.35	68.86	70.96	65.79	66.85
Baton Rouge	833.3	54.57	56.17	.....	56.21	53.46	53.26	56.02	55.15	56.27	52.17	53.56
Donaldsonville	885.4	.....	48.35	.....	48.29	...	45.28	47.27	47.27	47.33	.....	.....
Carrollton	957.0	36.01	36.81	.....	36.61	33.61	35.16	35.86	36.31	36.51	34.71	35.41

High-water marks of 1886 *and* 1887.

1886.

Locality of high-water marks.	Bank.	Distance from Cairo.	Elevation (Cairo datum).	Fall between high-water marks.	Distance between high-water marks.	Slope per mile.	Date of high water.
		Miles.	*Feet.*	*Feet.*	*Miles.*	*Feet.*	
Cairo, Ill.*	.....	.....	341.86	.....	.....	.....	April 19.
Columbus, Ky	L.	21.2	332.02	.....	.....	.....	April 19.
Mean	.....	21.2	.....	9.99	21.2	.471	
Belmont, Mo.*	R.	21.2	331.72	.....	.....	.....	April 19.
Salmon's Landing	L.	33.6	326.30	5.57	12.4	.449	April 19.
Hickman	L.	36.0	325.21	1.09	2.4	.454	April 19.
James Bayou	R.	44.5	322.10	3.11	8.5	.365	April 21.
Lester's Landing	L.	53.7	320.00	2.10	9.2	.228	April 17.
Morrison's*	R.	69.0	316.44	3.56	15.3	.232	April 20.
Point Pleasant	R.	79.5	310.83	5.61	10.5	.534	April 20.
Gayoso	R.	105.7	296.87	13.96	26.2	.532	April 20.
Cottonwood Point	R.	123.3	287.71	9.16	17.6	.520	April 21.
Ward's Landing	R.	148.2	276.59	10.12	24.9	.406	April 19.
Fulton, Tenn.*	L.	175.4	263.97	12.62	27.2	.463	April 22.
Randolph, Tenn	L.	182.6	260.90	3.07	7.2	.426	April 23.
Pecan Point, Ark	R.	196.0	253.55	6.35	13.4	.473	April 23.
Thomas Landing, Tenn	L.	201.2	252.34	1.21	5.2	.232	April 22.
Memphis, Tenn.*	L.	230.3	238.77	13.57	29.1	.466	April 23.
Star Landing, Miss. (1 mile above)	L.	257.2	226.41	12.36	26.9	.459	April 30.
Commerce Landing, Miss	L.	269.8	222.43	3.98	12.6	.315	April 30.
Mhoon's (½ mile above)	L.	275.6	220.45	1.98	5.8	.341	April 29.
Austin, Miss	L.	288.0	215.93	4.52	12.4	.364	April 29.
Cartwright's (behind Trotter's)	L.	304.0	211.91	4.02	16.0	.251	
Helena, Ark.*	R.	306.5	210.08	1.83	2.5	.732	April 30.
Opposite Glendale	R.	306.8	209.86	.12	.3	.....	
Glendale, Miss	L.	306.8	209.73	.13	.....	.....	
Below Grant's Pass	L.	313.0	207.01	2.72	6.2	.438	April 27.
Friar's Point	L.	319.0	204.08	2.93	6.0	.488	April 26.
Miller's Point	L.	325.0	200.79	3.29	6.0	.548	April 29.
Saint Louis Landing, Ark	R.	349.5	190.60	10.19	24.5	.415	May 2.
Sunflower Landing, Miss	L.	352.7	189.27	1.33	3.2	.415	May 2.
Anderson's Landing, Miss	L.	359.0	187.15	2.12	6.3	.336	April 30.
Australia, Miss	L.	370.0	184.70	2.45	11.0	.222	May 3.

*United States gauge.

any payments made, was forwarded for decision about the end of the fiscal year. At that time five of the barges had been nearly completed.

The mechanical draughtsman was employed in making a survey of the tow-boat *Mississippi*, and in nearly completing working drawings of that vessel and her machinery; in making drawings of the machinery of the *Minnetonka;* in completing the main drawings of the *Emma Etheridge;* in preparing drawings and specifications for coal barges for the general service, and for a steam-launch for the first district, to replace the *H. L. Abbot;* and in drawing up specifications for repairs to machinery of the tow-boats.

The amount available on July 1, 1886, was $20,816.89, and an allotment of $214,000 was made by the Commission at its meeting in September, 1886. There was expended during the year, $63,549.02; transferred to mouth of Red River, $15,000, and to Memphis Harbor, $500, leaving as an available balance on June 30, 1887, $155,767.87.

The expenditures for the general service, incident to moving stone, are apportioned among the districts according to the work done for each; the general expenses of the office, and those for repairs to and care of plant, are divided equally among the first, second, and third districts.

I present herewith a directory of the Commission, with its officers, and districts under improvement, statement of value of plant June 30, 1887, detailed statement of expenditures by the general service, detailed financial statement of all expenditures from July 1, 1886, to June 30, 1887, and a general statement of appropriations and expenditures from March 3, 1881, to June 30, 1887.

THE MISSISSIPPI RIVER COMMISSION.

Col. and Bvt. Maj. Gen. Quincy A. Gillmore, Corps of Engineers, president, 33 West Houston street, New York.

Lieut. Col. and Bvt. Brig. Gen. Cyrus B. Comstock, Corps of Engineers, 33 West Houston street, New York.

Lieut. Col. Charles R. Suter, Corps of Engineers, 1415 Washington avenue, Saint Louis.

Henry Mitchell, civil engineer, Office United States Coast and Geodetic Survey, Washington, D. C.

B. M. Harrod, civil engineer, Cotton Exchange Building, New Orleans.

Hon. Robert S. Taylor, post-office box 1648, Fort Wayne, Ind.

S. W. Ferguson, civil engineer, Greenville, Miss.

Capt. Smith S. Leach, Corps of Engineers, secretary, 2828 Washington avenue, Saint Louis.

THE COMMITTEE ON CONSTRUCTION.

Messrs. Gillmore, Comstock, Suter, and Harrod.

First Lieut. James L. Lusk, Corps of Engineers, secretary and assistant, 2653 Olive street, Saint Louis.

Officers of Corps of Engineers in charge of districts.

Districts.	Name and address of officer in charge.	Extent of district.
		Miles.
Illinois River to Ohio River	Maj. A. M. Miller, custom-house, Saint Louis	245
First district—Ohio River to foot of Island No. 40 (Plum Point Reach).	Capt. Smith S. Leach, custom-house, Cairo, Ill., and Elmot, Ark.	220
Second district—Foot of Island No. 40 to White River (Memphis Reach).	Capt. Smith S. Leach, 280 Front street, Memphis, Tenn.	180
Third district—White River to Warrenton, Miss. (Lake Providence Reach).	Capt. William T. Rossell, Memphis, Tenn., and Wilson's Point, La.	220
Fourth district—Warrenton to Head of Passes.	Capt. Dan C. Kingman, 3 South Rampart street, New Orleans.	484

Approximate value of plant belonging to the United States and used in the work of improving the Mississippi River (general service).

Class of property.	Approximate value, June 30, 1887.
Steam-boat *Mississippi*	$50,000
Steam-boat *Minnetonka*	33,000
1 pump-boat	500
1 store-boat	100
2 sounding-boats	25
28 barges (flush deck)	28,000
27 barges (low deck)	32,400
Office furniture	475
Total	144,500

Expenditures on account of appropriation for improving Mississippi River (no limit) from allotment for general service, from July 1, 1886, to June 30, 1887.

Repairs to general service plant	$31,348.43
Repairs to Commission survey plant	574.50
Special repairs to steamer *Minnetonka*	2,472.38
Running expenses, steamer *Mississippi*	1,202.71
Running expenses, steamer *Minnetonka* and *Etheridge*	3,779.35
Fuel for steamers and pump-boat	2,041.78
Office rent, salaries, and contingencies	8,852.71
Administration and inspection	1,116.84
Care of general service plant	11,160.32
Care of Commission survey plant	1,000.00
Total	63,549.02

The above expenditures were apportioned as follows:

To first district	$20,542.65
To second district	22,463.72
To third district	20,542.65

Financial statement, July 1, 1886, to June 30, 1887.

General service:		
Available July 1, 1886	$20,816.89	
Allotment, act August 5, 1886	214,000.00	
		$234,816.89
Transferred to mouth of Red River	15,000.00	
Transferred to Memphis Harbor	500.00	
Expenditures apportioned to June 30	60,058.07	
Expenditures unapportioned	3,490.95	
		79,049.02
Balance in Treasury	143,526.87	
Balance in hand	12,241.00	
		155,767.87
Des Moines Rapids to Illinois River:*		
Available July 1, 1886	27,829.06	
Received from sale of fuel	22.50	
		27,851.56
Expended		27,851.56
Illinois River to Ohio River and protection of the easterly bank of the Mississippi near Cairo:*		
Available July 1, 1886		41,309.65
Expended, Illinois River to Ohio River	$24,576.90	
Expended, Cairo	8,143.60	
		32,720.50
Balance in hand		8,589.15

* Includes only funds under act of July 5, 1884.

New Madrid Reach:		
(Allotment expended before July 1, 1886.)		
Plum Point Reach:		
Available July 1, 1886	$1,527.02	
Drawn from Treasury for general service	20,542.65	
Allotment, act August 5, 1886	377,250.00	
Deposit for overpayment	6.00	
		$399,325.67
Expended		73,018.42
Balance in Treasury	317,256.00	
Balance in hand	9,051.25	
		326,307.25
Saint Francis Front (first district):		
(Allotment expended before July 1, 1886.)		
Hickman, Ky.:		
Allotment, act August 5, 1886 (none of which has been expended)		18,750.00
Columbus, Ky.:		
Allotment, act August 5, 1886 (none of which has been expended)		18,750.00
Memphis Harbor and Reach:		
Available July 1, 1886	$5,802.11	
Allotment, act August 5, 1886	60,000.00	
Drawn from Treasury for general service	22,463.72	
		88,265.83
Expended		27,401.27
Balance in Treasury	60,000.00	
Balance in hand	864.56	
		60,864.56
Memphis Harbor:		
Available July 1, 1886	1,231.53	
Allotment, act August 5, 1886	56,250.00	
Transferred from general service	500.00	
Deposit for overpayment	.30	
		57,981.83
Expended		26,969.42
Balance in Treasury	21,250.00	
Balance in hand	9,762.41	
		31,012.41
Saint Francis Front (second district):		
(Allotment expended before July 1, 1886.)		
Survey of Helena Reach:		
(Allotment expended before July 1, 1886.)		
Lake Providence Reach:		
Available July 1, 1886	5,996.85	
Transferred from levees, Tensas Front	1,500.00	
Transferred from Delta Point	1,000.00	
Drawn from Treasury for general service	20,542.65	
Allotment, act August 5, 1886	270,000.00	
Deposit for overpayment	.20	
		299,039.70
Expended		68,344.31
Balance in Treasury	226,500.00	
Balance in hand	4,195.39	
		230,695.39
Vicksburg Harbor (survey):		
Allotment, act August 5, 1886		2,500.00
Expended		2,500.00
Vicksburg Harbor (dredging):		
(Allotment expended before July 1, 1886.)		
Vicksburg Harbor (Delta Point):		
Available July 1, 1886		60.59
Expended		60.59

Delta Point:		
Allotment, act August 5, 1886	$5,000.00	
Transferred to Lake Providence Reach	1,000.00	
		$4,000.00
Expended		3,968.10
Balance in hand		31.90
Survey of unleveed fronts (third district):		
(Allotment expended before July 1, 1886.)		
Choctaw Bend survey:		
(Allotment expended before July 1, 1886.)		
Repair of floating plant (third district):		
Allotment, act August 5, 1886		30,000.00
Expended		30,000.00
Greenville, Miss.:		
Allotment, act August 5, 1886 (none of which has been drawn or expended)		37,500.00
New Orleans Harbor:		
Available July 1, 1886	$2,007.65	
Allotment, act August 5, 1886	75,000.00	
		77,007.65
Expended		39,535.25
Balance in Treasury	32,500.00	
Balance in hand	4,972.40	
		37,472.40
Mouth of Red River:		
Available July 1, 1886	4,364.43	
Transferred from general service	15,000.00	
		19,364.43
Expended		19,013.60
Balance in hand		350.83
Red and Atchafalaya Rivers:		
Allotment, act August 5, 1886		187,500.00
Expended		27,128.84
Balance in Treasury	$157,500.00	
Balance in hand	2,871.16	
		160,371.16
Natchez and Vidalia:		
Available July 1, 1886		1,000.65
Expended		175.00
Balance in hand		825.65
Observations at Carrollton:		
(Allotment expended before July 1, 1886.)		
Survey of unleveed fronts (fourth district):		
(Allotment expended before July 1, 1886.)		
Survey of Cubitt's Gap:		
(Allotment expended before July 1, 1886.)		
Levees (first district):		
Plum Point:		
Allotment, act August 5, 1886		100,000.00
Expended		86,853.66
Balance in hand		13,146.34

Levees (second district):		
(*Yazoo Front.*—Allotment expended before July 1, 1886.)		
(*Long Lake.*—Allotment expended before July 1, 1886.)		
Yazoo-Miss-Delta:		
Allotment, act August 5, 1886		$100,000.00
Expended		99,918.00
Balance in hand		82.00
Levees (third district):		
Tensas Front:		
Available July 1, 1886		2,000.00
Transferred to Lake Providence Reach	$1,500.00	
Expended	456.12	
		1,956.12
Balance in hand		43.88
Tensas Front (Ark.):		
Allotment, act August 5, 1886		94,920.86
Expended		30,657.67
Balance in Treasury	$43,920.86	
Balance in hand	20,342.33	
		64,263.19
Yazoo Front:		
(Allotment expended before July 1, 1886.)		
Yazoo Front—Ben Lomond Loop:		
Allotment, act August 5, 1886		12,000.00
Expended		10,783.23
Balance in hand		1,216.77
Yazoo Front—Hughes Break:		
Paid by Treasury draft		6,849.69
Opossum Fork:		
Allotment, act August 5, 1886		38,500.00
Expended		28,109.99
Balance in hand		10,390.01
Protection of levees:		
Allotment, act August 5, 1886		18,000.00
Expended		13,077.02
Balance in Treasury	$4,000.00	
Balance in hand	922.98	
		4,922.98
Levees (fourth district):		
Atchafalaya Front:		
Available July 1, 1886	511.35	
Allotment, act August 5, 1886	40,000.00	
		40,511.35
Expended		40,511.35
Tensas Front:		
Available July 1, 1886	$1,413.72	
Allotment, act August 5, 1886	11,100.00	
		12,513.72
Expended		10,613.66
Balance in hand		1,900.06

Protection of levees:		
Allotment, act August 5, 1886		$7,000.00
Expended		503.82
Balance in hand		6,496.18
Total available July 1, 1886 (levees)	$3,925.07	
Allotments, act August 5, 1886	421,520.86	
Hughes Break	6,849.69	
		432,295.62
Transferred to Lake Providence Reach	1,500.00	
Expended	328,334.21	
		329,834.21
Balance in Treasury	47,920.86	
Balance in hand	54,540.55	
		102,461.41

Statement of funds available for improving Mississippi River, from March 3, 1881, to June 30, 1887.

Act of March 3, 1881		$1,000,000.00
Act of August 2, 1882		4,123,000.00
Act of January 19, 1884		1,000,000.00
Act of July 5, 1884, less $5,000 transferred to snag-boat service		2,065,000.00
Act of August 5, 1886, less $5,942.60 for expenses Office Chief of Engineers		1,994,057.40
Total specific appropriations		10,182,057.40
Balances from former appropriations applied to works below Cairo under act of August 2, 1882, less $123.42, reverted to Treasury	$272,504.96	
Same, for works above Cairo under act of July 5, 1884	22,632.53	
Total balances		295,137.49
Received from sales and loss of property		660.41
Total available		10,477,855.30
Expended to June 30, 1887		9,074,918.47
Available July 1, 1887	$1,189,749.98	
Unallotted in United States Treasury	213,186.85	
		1,402,936.83

Detailed statement of funds applied to improving the Mississippi River, under the Mississippi River Commission, from March 3, 1881, to June 30, 1887.

Districts.	From appropriations.	From balances.	From sales.	Total available.	Expended.	Balances in Treasury.	Balances in hand.	Total balances.
Des Moines Rapids to Illinois River	$195,000.00	$12,663.38	$145.14	$207,808.52	$207,808.52			
Illinois River to Ohio River	470,000.00	9,969.15	126.60	480,095.75	480,095.75			
Protection near Cairo	50,000.00			50,000.00	41,410.85		$8,589.15	$8,589.15
	520,000.00	9,969.15	126.60	530,095.75	521,506.60		8,589.15	8,589.15
Survey Saint Francis Front	4,873.11			4,873.11	4,873.11			
New Madrid Reach	210,361.91		2.83	210,364.74	210,364.74			
Plum Point Reach	2,808,260.69		105.70	2,808,366.39	2,482,059.14	$317,256100	9,051.25	326,307.25
Hickman, Ky	18,750.00			18,750.00		18,750.00		18,750.00
Columbus, Ky	18,750.00			18,750.00		18,750.00		18,750.00
Levees: Plum Point	100,000.00			100,006.00	86,853.66		13,146.34	13,146.34
Totals first district	3,160,995.71		108.53	3,161,104.24	2,784,150.65	354,756.00	22,197.59	376,953.59
Survey Saint Francis Front	4,000.90			4,000.00	4,000.00			
Survey Helena Reach	8,000.00			8,000.00	8,000.00			
Levees: Long Lake	15,000.00			15,000.00	15,000.00			
Yazoo Front	80,950.00			80,950.00	80,950.00			
Yazoo, Mississippi Delta	100,000.00			100,000.00	99,918.00		82.00	82.00
Memphis Harbor	256,750.00		22.80	256,772.80	225,760.39	21,250.00	9,762.41	31,012.41
Memphis Harbor and Reach	600,050.26		27.14	600,077.40	539,212.84	60,000.00	864.56	60,864.56
Totals second district	1,064,750.26		49.94	1,064,800.20	972,841.23	81,250.00	10,708.97	91,958.97
Survey Vicksburg Harbor	2,500.00			2,500.00	2,500.00			
Survey unleveed Fronts	1,000.00			1,000.00	1,000.00			
Survey Choctaw Reach	2,679.86			2,679.86	2,679.86			
Levees: Opossum Fork	63,500.00			63,500.00	53,109.99		10,390.01	10,390.01
Yazoo Front	364,878.95			364,878.95	364,878.95			
Yazoo Front (Ben Lomond)	12,000.00			12,000.00	10,783.23		1,216.77	1,216.77
Yazoo Front (Hughes' Break)	6,849.69			6,849.69	6,849.69			
Tensas Front	411,640.00			411,640.00	411,596.12		43.88	43.88
Tensas Front (Arkansas)	94,920.86			94,920.86	30,657.67	43,920.86	20,342.33	64,263.19
Protection of levees	18,000.00			18,000.00	13,077.02	4,000.00	922.98	4,922.98
Greenville, Miss	37,500.00			37,500.00		37,500.00		37,500.00
Repairs to floating plant	30,000.00			30,000.00	30,000.00			
Vicksburg Harbor: Dredging	61,812.12			61,812.12	61,812.12			
Delta Point	93,736.46	25,770.13		119,506.59	119,506.59			
Delta Point	4,000.00			4,000.00	3,968.10		31.90	31.90
Lake Providence Reach	2,587,823.46		218.95	2,588,042.41	2,357,347.02	226,500.00	4,195.39	230,695.39
Totals third district	3,792,841.40	25,770.13	218.95	3,818,830.48	3,469,766.36	311,920.86	37,143.26	349,064.12

Detailed statement of funds applied to improving the Mississippi River, under the Mississippi River Commission, etc.—Continued.

Districts.	From appropriations.	From balances.	From sales.	Total available.	Expended.	Balances in Treasury.	Balances in hand.	Total balances.
Survey Cubitt's Gap	137.14			137.14	137.14			
Survey unleveed fronts	1,000.00			1,000.00	1,000.00			
Observations at Carrollton	3,000.00			3,000.00	3,000.00			
Bonnet Carre Crevasse	15,000.00			15,000.00	15,000.00			
Natchez and Vidalia harbors		8,252.04		8,252.04	7,426.39		825.65	825.65
New Orleans Harbor	82,823.47	147,670.39		230,493.86	193,021.46	32,500.00	4,972.40	37,472.40
Mouth of Red River	38,405.00	90,812.40		129,217.40	128,866.57		350.83	350.83
Red and Atchafalaya rivers	187,500.00			187,500.00	27,128.84	157,500.00	2,871.16	160,371.16
Levees: Tensas Front	564,370.00			564,370.00	562,469.94		1,900.06	1,900.06
Atchafalaya Front	176,800.00			176,800.00	176,800.00			
Protection of levees	7,000.00			7,000.00	503.82		6,496.18	6,496.18
Totals fourth district	1,076,035.61	246,734.83		1,322,770.44	1,115,354.16	190,000.00	17,416.28	207,416.28
General service	159,247.57		11.25	159,258.82	3,490.95	143,526.87	12,241.00	155,767.87
Unallotted in United States Treasury	213,186.85			213,186.85		213,186.85		213,186.85
Grand totals	10,182,057.40	295,137.49	660.41	10,477,855.30	9,074,918.47	1,294,640.58	108,296.25	1,402,936.83

Respectfully submitted.

JAS. L. LUSK,
First Lieutenant of Engineers, Secretary Committee on Construction.

Col. Q. A. GILLMORE,
President Mississippi River Commission.

APPENDIX C.

REPORT OF CAPTAIN SMITH S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE FIRST DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 25, 1887.

SIR: I have the honor to submit the following report upon the work of improving Mississippi River, first district, for the fiscal year ending June 30, 1887.

From the beginning of the year until October nothing was done except the care of the floating and other property.

Early in August the passage of a river and harbor bill gave hope of a resumption of operations, and to provide for this, as well as to restore the plant to a proper condition, from which shortage of funds for two years had caused it to greatly deteriorate, a thorough repairing was undertaken.

Prior to the general allotment of the appropriation by the Commission preliminary estimates for this purpose were sent in and were approved by the Secretary of War. The amount allotted to the first and second districts was $20,000. This sum was expended almost entirely in making the floating property sea-worthy and weather-proof.

Experience having shown that, in view of the first cost, cost and frequency of repairs, and danger from fire and unexpected leaks, the canvas roofs heretofore used are not suitable for the purpose, a change to tin was made for all roofs except those of steam-boats and two shingle-roofed quarter-boats. The work amounted to 899 squares. It was done by contract, at $7.60 per square. Some deductions for assistance rendered and board of mechanics reduced the actual cash payment to the contractor to $6,619.40 The new roofs have given entire satisfaction. Aside from this, the expenditures were principally for labor of calkers and carpenters, and for lumber and oakum devoted to calking and repairing of gunwales, rakes, and decks. A small force of mechanics was employed in overhauling machinery and other work preparatory to putting pile-drivers in commission.

At a meeting of the Commission in September an allotment of $377,250 was made for continuing the work on Plum Point Reach. Notification of the approval of this allotment was received on the 22d of November, and a project for its expenditure was at once submitted.

Later new projects in greater detail were called for, and as much time had already been lost, and the working season was nearing its close, a partial project covering work of most urgency was hastily prepared and returned at once (December 8). This project contemplated repairs to the Plum Point system of dikes by closing breaks, and to the Bullerton No. 2 dike by a re-enforcement throughout its length. The estimate was $40,000.

Notification of the approval of this project and estimate and authority to begin work were received January 11, and the necessary preparations were at once begun. Before materials could be collected the spring rise set in, and nothing further could be done until April, when work on the Plum Point system was begun with a small force and prosecuted, with interruptions from high and low water, until completed.

Dike No. 5 had two breaks, with the intervening portion much damaged, and was rebuilt from the inner side of the inner gap to the outer end of the dike, a total length of 800 feet.

Dike No. 6 had also two breaks, but farther apart. The ends adjoining were good and the breaks were closed at small cost. All the work was of the standard three-row dike. No tipped or foot mats were used. The tipped mats of the original dike had broken down and disappeared, and it was not thought advisable to make the new work less permeable than the old. In all cases the old foot-mats were found in place and sufficient penetrations through them were procured, thus securing the new work against undermining without the cost of new foot-mats. The outer end of each dike was strengthened by three clumps of three large cypress piles each, driven as deep as possible, and strongly fastened to each other and to the dike. In the immediate vicinity of the new work its favorable results are already apparent. A longer interval of time and higher prevailing stages of water will be requisite to develop the effect of these repairs in increasing the efficiency of the Plum Point system.

At almost the very hour that the first tow of cypress piles designed for the re-enforcement of Bullerton No. 2 dike, under this same project and estimate, arrived at the head of the work, that dike broke, and its repair became an entirely new question. After the decline of the flood the dike was found in such condition as to make the cost of repairing it far greater than its value when done. Since the close of the year a new dike, below the old one, has been proposed and approved. It is hoped to complete it without exceeding the original allotment.

The total expenditures from this allotment have been $9,722.60, of which $7,460.77 was applied to the Plum Point repairs. The difference, $2,261.83, represents the value of materials and *supplies on hand* available for the new dike proposed.

On December 30, 1886, a project for the expenditure of the remainder of the Plum Point allotment was forwarded to the president of the Commission. This project provided for the extension of the Fletcher revetment, to cost $180,000, and the completion of the closure of Elmot and Island 30 chutes by dikes near their lower ends, the two estimated to cost $130,000. This project was approved by the Commission and forwarded to the Secretary of War. It was referred by the Secretary to Congress, raising the question as to whether the proposed revetment traversed the limitation placed by Congress upon that class of work. The project and all the correspondence are published in Ex. Doc. No. 88, Senate, Forty-ninth Congress, second session. No further action had been taken up to the close of the fiscal year, but since that time the amounts named have been withdrawn and reallotted to levees.

The allotment of $100,000 for levees on the Plum Point Reach was approved by the Secretary of War, and notification of that fact reached me on the 9th November. The work was at once advertised, and the bids were opened on the 25th:

The following bids were received:

No.	Names of bidders.		Price per cubic yard for earthwork.	Price per acre for felling timber.
			Cents.	
1	Messrs. McTighe, McKee & Harvey		21	$50.00
2	J. J. Cooney		21¾	40.00
3	Thomas F. Duffin and Henry Duffin	Sections 1 to 5	24	40.00
		Sections 6 to 12	21	40.00
		Ashport	25	.....

The award was made to the lowest bidders, Messrs. J. S. McTighe & Co., of Memphis. They began work on December 2, and pushed it with most commendable energy. The conduct of the gentlemen composing the firm, individually as well as collectively, left no room for doubt of their determination to fully and cheerfully meet every obligation, expressed or implied, which their contract imposed upon them. Previous experience led me to expect interruption of such work by high water about February 15, and that date was fixed in the contract for the completion of the work. The work was seriously interfered with on the 16th, and on the 21st was brought to a stop. By this time the work was practically completed, so far as the restriction of overflow was concerned. But for two weeks of freezing weather in January, during which time frost penetrated the ground to a depth of 9 inches—a very unusual thing for this latitude—the work would have been completed within the contract time, except the sodding, which I had postponed, in the interest of the United States, to a more favorable season. Observations during the overflow convinced me of the desirability of extending the work at the upper end a short distance beyond the terminus first selected.

An extension of the contract to the time when the sodding could be safely done was necessary, and finding sufficient funds remaining, I took occasion during the extension to order the additional work done. The levee as completed consists of two parts, joining near Ashport in a very obtuse angle. The new levee extending down the river is 55,000 feet in length, and extends to the upper end of the Plum Point dikes. The flank line, or "old levee," is 8,800 feet long, and joins a piece of fairly good levee extending 2 miles farther. Both are built with 3 and 3 to 1 slopes, and crowns of 6, 8, and 10 feet, the one nearest the height being used. The specifications were based on those previously used for the United States levees.

During the high water and while the levee was soft the only trouble experienced was from wave and rain wash and sloughing. Nothing alarming occurred at any time. Sacks and bagging were supplied, and a small patrol and repair force was kept employed. The latter, in addition to insuring the safety of the levee, accomplished much in the direction of redressing it for sodding.

The effect of this levee in restricting the escape of water from the river has been most gratifying. The sum allotted was less than half the estimated cost of a levee to completely stop the overflow; but its application to this line has had the effect of stopping all but the small amount of 20,000 cubic feet per second. This fact was determined by careful and repeated observations during the high water, and has resulted in a determination not to build the rest of the line, at least until other openings on the reach, where more good can be done with the same money, are closed.

The effects of the increased volume of water upon the channel have been marked, and in the aggregate beneficial. The caving of banks in the channels through which the volume of flow was considerably increased was noticeably accelerated. The channel at Island 30 crossing, where the increased volume was first concentrated in a single stream, was deepened by several feet.

The total channel area in the stretch of river where concentration has been effected was considerably increased by the lowering of 8 to 10 feet of the crests of three middle bars. This example is as free from extraneous complications as can reasonably be hoped for, and it can scarcely be doubted that the prevention of overflow by this levee and the enlargement of channel in the vicinity, immediately following, stand to each other in the relation of cause and effect.

The slope observations indicate a greater fall of water-surface during the flood of 1887, restrained by the levee, than during that of 1886 not so restrained. In other words, the enlargement of channel caused by the levee was accompanied by a lower flood level, as would naturally be expected. A balance of $13,146.34 remains for this work, from which the right of way is yet to be paid. It will be used in mowing weeds and such repairs as become necessary; and if a surplus remains it will be applied to extending the line at the upper end.

The loss of channel works during the fiscal year has been comparatively small, and all from causes which can be avoided in future work. Two cross-dikes have been broken by the pressure of drift, the break in each case having been made possible by the rotting of the piles. Bullerton No. 2 was broken by the pressure of drift above it on the 9th of February, the gauge reading 28 feet, while the same dike had withstood the year before the pressure of the same mass of drift at a stage 5 feet higher, and had in addition been subjected to the impact of a large field of drift which came down from a broken dike above. The impairment of strength by another year's decay was the sole cause of its breaking. The current through the chute increased about 50 per cent. immediately after the break, but did not reach a point where any scour could occur. The bottom in the neighborhood of the dike is full of logs imbedded in the sand, and no loss of deposits previously secured has taken place or may be expected. Discharge observations made fifteen days after the break showed the discharge through the chute to be but 6.7 per cent. of the total volume of the river.

Osceola No. 1 was a comparatively small dike and one of the oldest. It broke on March 2 by the drift moving over it, the river being at nearly its highest stage. In this case, as in the other, none of the deposits already secured have been or will be lost, but remain to attest the past usefulness of the lost works. These two dikes aggregate 2,200 feet in length, and are estimated to have cost $83,500.

The only loss of revetment has been at the middle section in Fletcher's Bend. But little caving has taken place between these sections during the year, the unprotected portions of the bank having receded until they were shielded by the projecting revetments. The entire destructive effort of the river has for the past year been directed against the middle section of this revetment. The bottom has scoured to a great depth in front of it, thus throwing a violent current close to the bank, and eddies above and below have attacked it in the rear. The result has been that at the cost of a short length of revetment about 3 miles of bank have been held on a nearly stable line, and this stability of bank has played an important part in the stability of channel below, which is at once the cause and the proof of improved navigation. The loss during the year has been about 500 feet, estimated to have cost $12,500, and this sum represents the total loss of this class of work on this reach during the year.

Aside from the cutting down of the middle bars above noted as a probable effect of the levee there have been no noteworthy changes in the depths or directions of the channels. On the Plum Point crossing, which is the only one under thorough control of the works, no depths less than 10 feet have at any time been found. This depth was only met with on two or three occasions, and for a day or two at a time, and was the result of temporary obstructions, which the current soon removed. The prevailing depths at extreme low water have been 12 and 13 feet, and at average low water 15 feet. The other shoal on the reach, known as the Island 30 crossing, carried from one to three feet less than the one just described, reaching minima of 8.5 and 9 feet. As before noted, however, as soon as the effect of the levee was felt this channel scoured out and has since been practically equal in depth with the Plum Point crossing.

The Island 30 crossing depends for its permanence of location and adequate depth almost wholly upon the maintenance of a fixed bank line in Fletcher's Bend, immediately above. If another year's neglect of the Fletcher's revetment allows that bend to resume its caving, obstructed navigation may be expected at Island 30.

There are submitted herewith financial statements and general balance sheet for the allotments in the first district, a list of civilian engineers, and a table of the value of plant.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

General Q. A. GILLMORE,
President Mississippi River Commission.

Appropriation for improving Mississippi River, first district.

FINANCIAL STATEMENT.

Balance on hand June 30, 1886, as per last report, including estimated liabilities		$1,540.56
Amounts received since (act of August 5, 1886):		
On account Plum Point Reach	$377,250.00	
On account levees Plum Point Reach	100,000.00	
On account Hickman, Ky	18,7 0.00	
On account Columbus, Ky	18,750.00	
		514,750.00
Total		516,290.56
Expended from July 1, 1886, to June 30, 1887:		
On account Plum Point Reach	$52,489.31	
On account levees Plum Point Reach	86,853.66	
		139,342.97
Balance June 30, 1887		376,947.59

SMITH S. LEACH,
Captain of Engineers.

Appropriation for improving Mississippi River, first district.—General balance sheet.

PLUM POINT REACH.

1886. June 30	To balance, including estimated liabilities	$1,540.56	1887. June 30	By amount expended from July 1, 1886, to June 30, 1887	$52,489.21
Nov. 18	To allotment from appropriation, act of August 5, 1886	377,250.00	June 30	By balance	326,301.35
		378,790.56			378,790.56

LEVEES, PLUM POINT REACH.

1886. Nov. 13	To allotment from appropriation, act of August 5, 1886	$100,000.00	1887. June 30	By amount expended to date	$86,853.66
			June 30	By balance	13,146.34
		100,000.00			100,000.00

HICKMAN, KY.

1886. Aug. 5	To amount appropriated, act of August 5, 1886	$18,750.00	1887. June 30	By balance	$18,750.00

COLUMBUS, KY.

1886. Aug. 5	To amount appropriated, act of August 5, 1886	$18,750.00	1887. June 30	By balance	$18,750.00

SMITH S. LEACH,
Captain of Engineers.

List of civilian engineers employed on work of river and harbor improvements in charge of Capt. Smith S. Leach, Corps of Engineers, from November 1, 1886, to June 30, 1887, both inclusive, under the river and harbor appropriation act approved August 5, 1886.

Name and place of residence.	Time employed.		Compensation per month.	Where employed.	Work on which employed.
	M.	*d.*			
J. A. Ockerson, Saint Louis, Mo.	8		$200	Saint Louis, Mo	Survey of Mississippi River.
L. L. Wheeler, Saint Louis, Mo.	8		175	....do	Do.
Edward Molitor, Saint Louis, Mo.	4		175	....do	Do.
C. W. Clark, Saint Louis, Mo.	8		125	....do	Survey of Mississippi River and inspecting water-gauges Mississippi River.
Kivas Tully, Saint Louis, Mo.	8		125	....do	Survey of Mississippi River.
John Ewens, Saint Louis, Mo.	6	11	125	....do	Do.
L. C. Jones, Saint Louis, Mo.	7		110	....do	Do.
E. H. Twining, New York, N.Y.	8		150 175	New York, N. Y.	Do.
W. M. Rees, Memphis, Tenn.	2 6		100 150	Memphis, Tenn.	Improving Mississippi River, Memphis Harbor and reach, Plum Point Reach, and Yazoo levees.
Aug. J. Nolty, Sans Souci, Ark.	8		125	Plum Point Reach	Improv'g Mississippi River, Plum Point Reach.
Chas. W. Stewart, Illinois	6		100	....do	Surveys.
F. A. Fisher, Memphis, Tenn.		8	120	Memphis, Tenn.	Levee inspector, Plum Point levees.
S. Elliott Moore, Memphis, Tenn.	6 1	12½	140 145	Plum Point Reach	Do.
Geo. Selman, Tennessee	1	8	140	In the field	Levee inspector.
J. M. Kloster, Memphis, Tenn.	4	5	140	....do	Do.
E. T. Washburn, Memphis, Tenn.	3 2	12	75 100	....do	Do.
Jas. S. Martin, Memphis, Tenn.	3		60	....do	Do.
H. M. Marshall, Memphis, Tenn.	3 2	12	55 100	....do	Do.

SMITH S. LEACH,
Captain of Engineers.

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River.—First district.

Class of property.	No.	Approximate value, June 30, 1887.
Steamer *P. Kirns*	1	$5,372
Steamer *Itasca*	1	5,780
Steamer *Abbott* (damaged by fire)	1	1,476
Launch *Titania*	1	720
Pile-drivers	37	84,608
Quarter boats	14	19,173
Mattress boats	10	18,112
Graders	2	25,206
Derrick boats	2	3,909
Barges	50	33,043
Machine-shop boat	1	3,613
Whitehall boats	7	156
Skiffs	60	358
Tools and appliances	.....	7,000
Office furniture	.....	80
Surveying instruments	.....	200
Total	.....	208,806

SMITH S. LEACH,
Captain of Engineers.

APPENDIX D.

REPORT OF CAPTAIN SMITH S. LEACH, CORPS OF ENGINEERS, UPON OPERATIONS IN THE SECOND DISTRICT.

UNITED STATES ENGINEER OFFICE,
Memphis, Tenn., July 25, 1887.

SIR: I have the honor to submit the following report upon the work of "Improving Mississippi River," second district, for the fiscal year ending June 30, 1887:

The only work done in this district under the appropriation for improving Mississippi River was the continuation of the revetment of the Memphis Harbor front. This work was provided for by a special item of $57,250 in the act of August 5, 1886. It was simply the continuation of a project already formulated, approved, and partly executed under former appropriations, and comprising in general terms the protection of the bank by continuous revetment from a point above Wolf River to the lower end of the paved levee at Beale street, a total length of over 7,000 feet. The part remaining to be done was from Jefferson to Beale streets, comprising the whole of the paved levee, a length of 3,000 feet.

Later changes in the regimen of the river had transferred the maximum strain from the upper to the lower end of this portion, and it appearing from the estimates that the entire work could not be done for the money available, it was decided to begin at the lower end and work up-stream as far as possible. Improved methods of construction, an unusually favorable working season, and probably a wholesome provision for contingencies in the former estimates, have made it possible to complete the work with the present funds. All but about 600 feet was covered during the working season last fall, and an ample balance remains to complete that portion at the next low water.

No changes of importance were made in the methods of construction. The first mattress was 285 feet wide and 700 feet long, the second was 265, and the third and fourth 250 feet wide, all having net lengths of about 500 feet. Upon the completion of this work a full report with statements of cost will be made.

For more than two years past the caving of the bluff below the paved levee has caused great apprehension. During the latter part of the last fiscal year the situation became very critical. Several valuable manufacturing sites threatened to cave into the river. One wing of an elevator did fall in, and part of the storage sheds of an oil-mill had to be torn down to prevent their going the same way. An ice company lost several inclines.

The break of the bank had approached within a few feet of railroad tracks in Tennessee street, which bring four roads into the city. Behind Tennessee street were oil-mills, an ice factory, and a brewery, and behind these again some of the choice residence property of the city on Shelby street.

Finding that the plan of the Government operations in this locality did not promise any work on this front, the parties interested applied to me for an opinion as to the possibility of preventing this caving. I informed them that I believed it could be done, and outlined the plan I would propose, being a system of submerged spurs of brush-cribs ballasted with stone, resting on large floor mats, extending to high-water mark. Being requested to put the plan on paper, I did so, and with it as a basis an organized effort was made to raise the necessary funds. My estimate was $55,000 for five spurs, protecting 2,200 feet. The volume of the subscription was placed at $60,000. Of this sum $40,000 was subscribed by the four railroads and the balance by private parties. All these preliminaries were based upon the supposition that arrangements could be made to use such of the Government plant then lying idle as might be needed for the work.

Application was made to the Secretary of War, resulting in permission to use the necessary plant and any materials which might be on hand. This latter provision made the United States a contributor to the work in a small sum, and is the reason why this description appears in my official report. The loan of the plant was under the condition that it should remain in my possession and be worked by me, which devolved upon me the immediate conduct of the work. As the same thing had already been proposed by the citizens' committee, it was acceptable to them.

Work began the latter part of July and the five spurs were completed by the end of December. They were subjected to a severe strain by the prolonged and very high flood which occurred this year. They were not damaged in the least, and have prevented any further loss of ground. They have caused considerable deposits, but less than I had hoped. An endeavor will be made to increase the deposits by putting in two or more short spurs between the main ones. Having succeeded in stopping the ravages of the river, I am now ambitious to restore to these people a portion of the ground which they have lost. A considerable balance of funds remains, and I propose to apply it as indicated.

The very small force employed during the suspension of active operations and the pressure of other work have prevented me from presenting with this report a full description of the work and a statement of its cost in detail. I do not feel that I can give this work precedence in the office over strictly official matters, but will use the first comparative leisure to prepare this information, which will be, in my judgment, of importance in connection with the general problem of river control.

A loss of about 500 feet at the lower end of the Hopefield revetment is the sum total of losses of work in this district during the fiscal year. This loss is entirely due to caving working up from below, and would not have occurred had not the work been left exposed for two years in an unfinished condition. The amount of revetment in place at the beginning of the year and its value were—

Hopefield Bend, 8,500 feet, at $20	$170,000
Memphis Harbor, 4,000 feet, at $25	100,000
Total	270,000

Of this there was lost, as above stated, 500 feet, worth $10,000, or a trifle over one-third of 1 per cent. per annum. The remainder is to all appearances as good as ever. Had money been available to extend this work there would be no loss to report.

Hopefield Point has continued to cave, though less rapidly than formerly. It has receded about 1,500 feet since December, 1885. This throws the current further down on the Memphis front and gradually increases the area of slackwater in the upper harbor.

Notification of the approval of the allotment of $100,000 for levees in the Yazoo-Mississippi Delta district was received November 13, and the work was advertised at once. After consultation with Major Dabney, the engineer of the district, and the examination of his records and of data from other sources, it was decided to put up about 200,000 yards of earthwork from the Hushpucana Levee to the Coahoma County line at the lower end of the district, the balance to be applied at intervals along the upper portion of the line.

A proposition was received from McKee, McLaws & Co., who had contracts under the State board covering the same ground, with camps established and forces organized, to put up the latter part of the work at 21 cents a yard. In view of the reasonableness of the figure and the considerable saving of time effected, this offer was accepted and that amount withdrawn from the letting. It may be remarked that in all the work subsequently let on sealed proposals no price as low as this was obtained.

Bids for the Hushpucana work were opened December 5, and were as follows:

No.	Names of bidders.	Price of earthwork per cubic yard.	Price of felling timber per acre.	Part of work proposed for.
		Cents.		
1	Daniel T. Hartnett	21½	$50.00	Sections 15, 16, 17, and 18.
2	Michael McTighe	26	35.00	Sections 15 and 16.
3	P. F. Lamb and Arthur Donnelly	25¾	55.00	The whole line.
4	J. J. Cooney	25	50.00	Sections 18, 19, and 20.
5	Hugh Feran and M. C. Pearce	25	.....	Section 18 (Robinsonville).
6	George Arnold and A. A. Arnold	33	50.00	Sections 15 and 16.
		30		Section 17.
		22		Section 18.
		28		Sections 19 and 20.
		26		Section 21.
		22		Sections 22 to 27, inclusive.

Awards were made as follows:

	Cents.
To D. T. Hartnett, sections 15, 16, 17, and 18, at	21½
To J. J. Cooney, sections 19 and 20, at	25
To George Arnold & Co., section 21, at	26
To George Arnold and Co., sections 22 to 27, inclusive, at	22

All work has been satisfactorily completed. The upper portion consisted entirely of enlargements so distributed as, in connection with the State work, to give all the old and insecure parts of the line ample section and a grade 3 feet above the high water of 1882, the standard of the district.

The work at the lower end consisted of a re-enforcing banquette behind the large Hushpucana Levee; a similar banquette behind another large levee, known as the "Buck's Bayou;" a loop to throw out an angle at Robinsonville, which was threatened with caving, and enlargement and repairing of portions of the line adjacent. No losses

occurred during the flood. Some high-water expenses were incurred, however, to ward off threatened danger. There is good reason to believe that had not the Hushpucana Banquette been built, that enormous dam would have been seriously damaged, if not washed away.

Financial statements and general balance sheet and table of value of plant for the second district are herewith.

For list of civilian engineers employed see table accompanying my report for first district.

Very respectfully, your obedient servant,

SMITH S. LEACH,
Captain of Engineers.

General Q. A. GILLMORE,
President Mississippi River Commission.

Appropriation for Improving Mississippi River, second district.

FINANCIAL STATEMENT.

Balance on hand June 30, 1886, as per last report, including estimated liabilities		$7,026.96
Amounts received since (act of August 5, 1886):		
On account Memphis Harbor	$56,250.00	
On account Memphis Reach	60,000.00	
On account Yazoo-Mississippi Delta levee district	100,000.00	
On account sale of fuel	6.67	
On account overpayment refunded	.30	
On account steamer *Minnetonka*, refunded from general service allotment	500.00	
		216,756.97
Total		223,783.93
Expended from July 1, 1886, to June 30, 1887:		
On account Memphis Harbor	$26,969.41	
On account Memphis Reach	4,937.55	
On account Yazoo-Mississippi Delta levee district	99,918.00	
		131,824.96
Balance June 30, 1887		91,958.97

SMITH S. LEACH,
Captain of Engineers.

Improving Mississippi River, second district—General balance sheet.

MEMPHIS HARBOR.

1886. June 30	To balance	$1,231.52	1887. June 30	By amount expended from July 1, 1886, to date	$26,969.41
Aug. 5	To amount appropriated (act of August 5, 1886)	56,250.00	June 30	By balance	31,012.41
1887. Jan. 31	To overpayment refunded	.30			
May 3	To amount refunded from general service allotment on account steamer *Minnetonka*	500.00			
		57,981.82			57,981.82

MEMPHIS HARBOR AND REACH.

1886. June 30	To balance, including estimated liabilities	$5,795.44	1887. June 30	By amount expended from July 1, 1886, to date	$4,937.55
Jan. 25	To deposit, sale of fuel	6.67	June 30	By balance	60,864.56
1887. Nov. 18	To allotment from appropriation (act of August 5, 1886)	60,000.00			
		65,802.11			65,802.11

LEVEES, YAZOO-MISSISSIPPI DELTA LEVEE DISTRICT, UPPER YAZOO.

1886. Nov. 13	To amount allotted from appropriation (act of August 5, 1886)	$100,000.00	1887. June 30	By amount expended to date	$99,918.00
			June 30	By balance	82.00
		100,000.00			$100,000.00

SMITH S. LEACH,
Captain of Engineers.

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River.—Second district.

Class of property.	No.	Approximate value, June 30, 1887.
Steamer *H. M. Graham*	1	$4,176.00
Launch *Daphne*	1	1,107.00
Flat-boats	3	596.00
Mattress-boats	2	5,384.00
Machine-shop boat	1	3,974.00
Screen-boats	4	2,650.00
Quarter-boats	5	5,252.00
Barges	23	19,598.00
Skiffs	14	119.00
Pile-drivers	9	19,022.00
Coal shells	2	265.00
Tools and appliances	.....	3,500.00
Office furniture	.....	120.00
Surveying instruments	.....	150.00
Total	.....	65,912.00

SMITH S. LEACH,
Captain of Engineers.

APPENDIX E.

REPORT OF CAPTAIN WILLIAM. T. ROSSELL, CORPS OF ENGINEERS, UPON OPERATIONS IN THE THIRD DISTRICT.

UNITED STATES ENGINEER OFFICE,
IMPROVING MISSISSIPPI RIVER, THIRD DISTRICT,
Memphis, Tenn., July 28, 1887.

SIR: I have the honor to transmit herewith inclosed copy of my annual report for the third district, improving Mississippi River, for the fiscal year ending June 30, 1887.

Very respectfully, your obedient servant,

WM. T. ROSSELL,
Captain of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, U. S. Army,
President Mississippi River Commission, Army Building, New York.

REPORT.

The third district, improving Mississippi River, extends from mouth of White River to Warrenton, a distance of about 220 miles, and includes Lake Providence Reach and the harbors of Vicksburg and Greenville. There is also included all work done by the United States on levees on both sides of the river.

I. Lake Providence Reach.

This reach extends from Carolina Landing, 517 miles below Cairo, to the foot of Island No, 95, a distance of 35 miles. This reach, and the proposed methods of improvement, have been described in the reports of the Mississippi River Commission for past years.

During the past fiscal year no work of construction has been done nor have any repairs to existing works been carried on. The work during the year has been confined to care of Government property, repairs to plant and surveys.

Condition of Works.

Duncansby system of dikes.—This system is in the same condition as last year. The shore ends of cross-dikes 6, 7, and 8, still hold, and in a measure deflect the water from Skipwith Chute, which is now closed at its upper end at 20-foot stage of water.

Cottonwood system of dikes.—During the year this system has sustained considerable damage. All the longitudinal dike, from its down-stream end, has washed out as far as cross-dike No. 1. About 300 feet of the outer ends of cross-dikes Nos. 2 and 3 have also gone.

A channel has developed near and parallel to the site of the longitudinal dike, of sufficient width for steam-boats, 400 to 500 feet; its depth was 15 feet, L. P. gauge, reading 14 feet, when in the main channel there was 17 feet. It would seem probable that, with these two channels in existence, there might be shoal water here during low water. There is also danger that the channel, in crossing the river below, may attack and injure the Baleshed system of dikes. This would seem to indicate that, if it is intended to hold these dikes, something should be done before the next high water.

Mayersville system of dikes.—Slight damage has been done here, due to the breaking of the piles and also to some caving. However, Mayersville Chute has shoaled during the year, and there seems to be no probability of any enlargement at present. The breaking down of the Cottonwood system will, I believe, relieve this bank partially.

Baleshed system of dikes.—These dikes, considering the length of time they have been built, and the short life of cottonwood piles, show very gratifying results as to condition and effect. The bar formed by them extends from the mouth of Mayersville chute to the foot of Stack Island, and at the 15-foot stage no water enters either Baleshed or Stack Island chutes. There has also been a very material fill in Baleshed Chute during the year. The conditions seem favorable for this work, unless changes in the vicinity of Cottonwood introduce complications.

Stack Island system of dikes.- Some damage has been done here from breaking of piles in the main cross dike from drift, but the dike is in general good condition. There has been a very considerable narrowing and shoaling of the Stack Island Chute. The depth of water reduced to zero of the L. P. gauge was, in 1882, 61 feet: 1883, 44 feet; 1884, 29 feet; 1886, 25 feet; and in July, 1887, 18 feet.

Pilcher's Point revetment.—As no repairs have been placed on this work since work of construction ceased in January, 1885, as reported in my last annual, much of the revetment had disappeared, but the general line of the bank had been preserved. The last high water coming on this work in its dilapidated condition, the results were severe, as was foreseen. With the exception of 800 linear feet at the upper end, the work is gone. In places the caving is from 200 to 500 feet deep, and extends from 5,000 feet above Pilcher's to 1,500 feet below.

Mayersville Island revetment.—This revetment has practically disappeared, and caving has continued during the year on the head and face of the island. A space now exists between the head of the island and the Mayersville cross dike.

CHANNEL DEPTHS.

For comparison the least depths found during the low-water seasons, 1884, 1885, and 1886, and to June 30, 1887, are given in tabulated form.

Statement showing least channel depths, Lake Providence Reach, 1884, 1885, 1886, *and* 1887.

Date.	1884.			1885.			
	L. P. gauge-readings.	Stack Island Crossing.	Ben Lomond Crossing.	L. P. gauge-readings.	Duncanaby Crossing.	Stack Island Crossing.	Ben Lomond Crossing.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
January 10	30	.....	.....	29.4	.....	40	39
January 20	25.4	.....	.....	33.6	.....	46	43
January 30	25.5	.....	.....	34.6	.....	44	42
February 10	30	.....	.....	31.4	.....	39	38.5
February 20	36.8	.....	.....	27.1	.....	33	33
February 28	37.7	.....	.....	21.2	.....	24.5	26.5
March 10	38.1	.....	.....	18.6	.....	23.5	26
March 20	38.1	.....	.....	27.1	.....	.....	.....
March 30	37.8	.....	.....	27	.....	.....	.....
April 10	36.6	.....	.....	22	.....	.....	.....
April 20	36.8	.....	.....	28.1	.....	.....	.....
April 30	36.5	.....	.....	32.2	.....	.....	.....
May 10	36.5	.....	.....	35.5	.....	.....	.....
May 20	35.9	.....	.....	29.4	.....	.....	.....
May 30	32.5	.....	.....	22.9	.....	.....	.....
June 10	24.6	.....	.....	25	31.5	24	33.5
June 20	23.3	.....	.....	24.5	31	21	29.5
June 30	25.7	.....	.....	28	35	22.6	29.5
July 10	21.1	.....	.....	24.7	31.4	20	24
July 20	19.6	.....	.....	22	29	17	26
July 30	15.8	.....	.....	15.5	20	14	18.5
August 10	15.5	18	24	14.0	19	14	21
August 20	12.6	14	12	15.6	36	15	28
August 30	8.9	10	14	12.2	30	15	29
September 10	9.1	14	17	13.4	32	16	30
September 20	6.6	17	11	18	35	19	25
September 30	5.8	15	11	15.5	30	22	20
October 10	14.8	24.5	15	9	22	14	15
October 20	13.7	26	24	7.1	18	14	13
October 30	12	24.5	22.5	8	18	15	14
November 10	11.1	23	26	10.7	20	16	15
November 20	7.2	21	17	19.2	34	28	26
November 30	6.6	19	16	13.5	23	19	19
December 10	7.8	20	18	10.5	21	18	18
December 20	11	23.5	19	12	22	21	19
December 30	12	21	20	16.5	25	24	24

Statement showing least channel depths, etc.—Continued.

Date.	1886.					1887.				
	L. P. gauge-readings.	Duncansby Crossing.	Stack Island Crossing.	Ben Lomond Crossing.	Wilderness Crossing.	L. P. guage-readings.	Duncansby Crossing.	Wilderness Crossing.	Stack Island Crossing.	Ben Lomond Crossing.
	Feet.	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*	*Feet.*
January 10	17.2	27	24	24	.....	13.7	20	21	19	15
January 20	22.5	32	31	27	.....	7.8	17	18	15	10
January 30	21.5	31	29	32	.....	14.8	29	28	24	21
February 10	20.5	27	27	24.5	.....	28.7	40	43	37	36
February 20	27.5	35	33	27.5	.....	32.7	52	41	42	40
February 28	31.7	38	32	31.7	.....	35.7	50	38	43	35
March 10	32	42	29	38	.....	36.2	53	40	45	43
March 20	25	30	27	34	.....	.....	.....	.....	.....	.....
March 30	22.5	33	27	35	.....	37.8	50	40	43	41
April 10	32.2	40	36	32.2	.....	33	40	26	35	29
April 20	35.5	41	39	35.5	.....	23	29	20	25	36
April 30	37.5	43	38	35.7	.....	24	31	33	24	23
May 10	37.5	45	40	43	.....	31.5	37	33	35	39
May 20	35.5	43	38	44	.....	29	34	29	31	35
May 30	35.2	39	37	42	.....	21	28	21	23	25
June 10	27	31	28	32	.....	14.5	22	18	17	20
June 20	21	28	21	29	.....	16.5	23	21	19	22
June 30	23	32	25	32	.....	17	23	21	19	23
July 10	24.5	28	24	31	.....	.....	.....	.....	.....	.....
July 20	17	22	16	21	.....	.....	.....	.....	.....	.....
July 30	12	18	11	16	.....	.....	.....	.....	.....	.....
August 10	10	15	11	15	.....	.....	.....	.....	.....	.....
August 20	8	16	10	12	.....	.....	.....	.....	.....	.....
August 30	7.8	18	11	15	.....	.....	.....	.....	.....	.....
September 10	6.6	16	9.5	15	.....	.....	.....	.....	.....	.....
September 20	5.3	15	9	12.5	14	.....	.....	.....	.....	.....
September 30	4.7	13	8.5	11.5	12	.....	.....	.....	.....	.....
October 10	5	14.5	9	12	12	.....	.....	.....	.....	.....
October 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
October 30	2	10.5	11	10	12	.....	.....	.....	.....	.....
November 10	2.3	11	11	11	10.5	.....	.....	.....	.....	.....
November 20	2	10.5	12.5	9.5	9.5	.....	.....	.....	.....	.....
November 30	12.3	23.5	19.5	18	18.5	.....	.....	.....	.....	.....
December 10	15.7	26	20	20	24	.....	.....	.....	.....	.....
December 20	6.3	21	11	12	12.5	.....	.....	.....	.....	.....
December 30	14.6	32	21	17	34.5	.....	.....	.....	.....	.....

NOTE.—No soundings were taken on the crossings from January to August, 1884, or from March to June, 1885, the river being above midstage.

The least depths found anywhere on the reach were as follows: 1884, Stack Island Crossing, 10 feet; 1885, Ben Lomond Crossing, 13 feet; 1886, Stack Island Crossing, 8.5 feet.

During 1879 the lowest point reached on the Lake Providence gauge was 0.55 feet, and at that time there was only 5 feet on Stack Island Crossing.

The lowest readings of the gauge were in 1884, 5.23 feet; 1885, 5.54 feet; 1886, 2.55 feet.

Low water of 1887 has not yet been reached, the lowest reading yet reached being, on January 20, 7.8 feet, at which time the shoalest crossing was Ben Lomond, 10 feet.

CHANGES IN CHANNEL AND SHORE-LINES.

A comparison of the low-water surveys of 1882 and December, 1886, has been made by Assistant Engineer Hider, and the drawings and text have been furnished to each member of the Commission.

The low-water channels of this year do not differ materially from those of last year. I would, however, call attention to the new channel forming near the cottonwood system, and to the fact that the tow-head and bar in front of Lake Providence is pushing down-stream.

Caving banks.—The principal caving on the right bank has been in Louisiana Bend, at Elton and at Judge Wyly's; on the left bank, on the upper side of Sarah's Island, between R. 30 and R. 36, at Mayersville Island, and at Shipland.

In September, 1886, I was ordered to prepare a general project for work in the third district, under appropriations made by act of August 5, 1886, and submit the

same to the Mississippi River Commission, at meeting held by them in New York, September 16, 1886. This was done, and an allotment made by the Commission and approved by the Secretary of War.

A project was prepared and submitted for the expenditure of this money, and, with certain conditions, was approved by the Commission at their meeting in Saint Louis, Mo., November 26, 1886. I was afterwards directed, however, before expending these amounts, to furnish detailed projects and estimates. Under these orders I prepared and forwarded to each member of the Commission projects, in each case accompanied by maps and plans, as follows: Repairs to revetment at Pilcher's, December 21, 1886, and January 17, 1887; repairs to Cottonwood dikes, January 29, 1887; repairs to Baleshed dikes, February 23, 1887; building deflecting dike at Lake Providence, January 29, 1887. None of these projects, however, have been approved by the Secretary of War.

Extensive repairs have been made to the plant and some supplies bought, such as rope, etc. Repairs to plant began in September, 1886, and were suspended May 1, 1887. The fleet is now in serviceable condition, needing only some supplies, such as hose, etc., which, from their perishable nature, should be bought at the last moment. The property must deteriorate, and will need more repairs before long.

The following is a list of the principal repairs made:

Fifteen quarter-boats calked above light water; of these new canvas roofs were put on 6.

One quarter-boat taken out on dock; bottom and sides calked.

Ten mattress-boats calked above light water; rotten places in gunwales cut out and replaced with new material; new skids made for same and boats painted.

One large machine-shop fitted up with new shafting, two new forges, and the machinery from the old shop.

One small pump-boat taken out on dock; sides and bottom calked and painted; new roof.

One large pump-boat taken out on dock; new sides, deck-frames, and hog-chains.

One grader, No. 1, taken out on dock; rotten parts of gunwales and decks replaced with new material; bottom, sides, and deck calked; machinery overhauled, pump cylinder repaired and put in working order; outside painted and new canvas roof put on.

One grader, No. 3, taken out on dock; rotten parts of gunwales and decks replaced with new material; sides and deck calked; two new water-cylinders put in place; other parts of machinery repaired; new canvas roofs put on and stage repaired; outside painted.

One large floating dock; new platform and truss built to support machinery; pumps and machinery repaired; new boiler put up, machinery and boiler moved farther forward; sides and rakes calked; gate repaired, etc.

Sixteen pile-drivers; rotten places in gunwales and decks replaced with new materials; leads and braces repaired; new hog-chains put in 5 drivers; machinery overhauled and repaired; new canvas roof put on; calked above light water, and outsides painted.

Thirty-three square barges; rotten places in gunwales and decks replaced with new material; calked above light water; 28 of these were painted.

Ten model barges; rotten places in gunwales and decks replaced with new material; calked above light water, and painted.

Steam-boat *Vidalia;* new roof; new after cabin built; calked above light water; machinery repaired and outside painted.

Steamboat *Osceola;* new furnace; roof repaired; capstan and other parts of machinery overhauled; wheel repaired; calked above light water, and painted inside and out.

Steam-boat *Meter;* new roof; calked above light water; wheel repaired, and outside painted.

Three yawls repaired and painted.

Ten skiffs repaired, calked, and painted.

One snag-boat, *Henry Sheldon*, docked and repaired.

Seventeen boats, consisting of coal barges and other boats, were calked and repaired for light service, not being considered worth more thorough repairs.

In addition, a number of minor repairs to different portions of the plant were made, not enumerated above.

Statement showing cost of labor and subsistence for care of fleet and repairs to same.

Classification.	Pay-roll.	Subsistence.	Total.
Care of fleet and minor repairs	$20,941.93	$3,449.34	$23,491.27
Repairs to plant	17,266.89	2,153.37	19,420.26
Surveys, Lake Providence Reach	3,149.56	447.36	3,596.92
Moving rock at Arkansas City	275.22	77.13	352.35
Total	40,733.60	6,127.20	46,860.80

The cost of material used in repairs was	$10,724.62
Labor cost as above	19,420.26
Total cost of repairs	30,144.88

The highest number of men employed at any one time was 136; the least number 36.

Average cost of subsistence.

Cost of raw material, each ration	$0.248
Cost of each ration served	.356
Cost of ration for each day's labor secured	.393

Material expended.

Articles.	Quantity.	Articles.	Quantity.
Coal ... bushels	26,876	Solder ... pounds	10
Linseed oil ... gallons	384	Chalk ... do	25
Shingles	6,000	Borax ... do	5
Mineral paint ... gallons	1,200	Waste ... do	500
Paraffine ... do	5	Paraffine roofing ... yards	1,000
White-lead ... pounds	10,750	Iron ... pounds	23,227
Lumber ... feet	137,010	Tarred rope ... do	1,941
Fire-clay ... barrels	5	Gas pipe ... linear feet	1,210
Charcoal ... do	5	Fire-brick	1,000
Boiler tiles	50	Putty ... pounds	10
Wire rope ... linear feet	200	Screws ... gross	150
Lime ... barrels	10	Canvas ... yards	8,268
Turpentine ... gallons	50	Spikes and nails ... pounds	6,000
Salt ... barrels	258	Oakum ... do	1,100
Tin ... box	1	Finishing nails ... do	35
Leather ... sides	4	Glass ... feet	200
Lamp black ... pounds	10	Tacks ... dozen packages	265

List of barges, pile-drivers, tow-boats, etc., constituting floating property belonging to Lake Providence Reach.

Classification.	No.	Total.	Dimensions.	Classification.	No.	Total.	Dimensions.
Tow-boats (one in general service department)	4	4	.....	Wharf-boat	1	1	100 x 34
Graders (steam)	2	3	100 x 30	Pump-boat (steam)	1	1	47 x 12
Graders (small)	1		80 x 16	Barges (decked)	8	33	120 x 25
Mattress-boats	4	7	160 x 30	Do	23		100 x 25
Do	2		200 x 30	Do	2		160 x 26
Mattress-boat (old)	1		140 x 49	Do	6	7	75 x 15
Screen-boats	4	4	100 x 25	Do	1		65 x 15
Quarter-boats	10	15	130 x 25	Barges, model	10	10	140 x 28
Do	1		100 x 30	Pile-drivers	12	16	70 x 20
Do	1		135 x 30	Do	4		82 x 20
Do	2		80 x 20	Catamaran	1	1	.....
Do	1		70 x 18	Calking flats	9	9	25 x 7
Machine-shop boat (old)	1	2	100 x 20	Yawls	7	7	.....
Machine-shop boat (new)	1		211 x 35	Skiffs (old)	32	32	.....
Carpenter-shop boat	1	1	211 x 25	Coal barges, open (old)	2	2	130 x 25
Dock	1	3	186 x 50	Coal barges, decked (old)	10	10	130 x 25
Do	1		37 x 16	Scows, small	2	2	.....
Do	1		27 x 8	Total	....	170	.....

SURVEY.

A survey of the reach was made and copies of the map sent to each member of the Commission May 16, 1887.

GAUGES.

On May 1, 1887, the gauges at Clarendon and Arkansas City, Ark., and Greenville and Yazoo City, Miss., were placed under this office, to be paid for from money belonging to Lake Providence Reach. Inspector Clark has just finished inspecting them.

II. Vicksburg Harbor.

The work here consists of the improvement of the basin and channel in Centennial Lake and the maintenance of Delta Point, Louisiana, opposite Vicksburg. The retention of Delta Point is deemed essential to prevent further recession of the river from Vicksburg, and to maintain the regimen of the river immediately below.

As stated in my last annual report, a small break existed in the Delta Point revetment. At the meeting of the Mississippi River Commission in New York, September, 1886, an allotment of $5,000 was made for this repair work. Work was begun on October 21, 1886, and finished November 30, within the allotment, and the work is now reported in good condition. The following work was accomplished and material expended:

Brush and poles cut	cords	125
Grading	cubic yards	1,250
Stone	do	1,010
Subaqueous mat built and sunk	square feet	4,082
Revetment built in place	do	6,900
Revetment ballasted	do	40,750

This work will probably, however, need slight annual repairs.

By the river and harbor act approved August 5, 1886, $75,000 was appropriated for Vicksburg Harbor, as follows:

"* * * Seventy-five thousand dollars in deepening the channel at Vicksburg by dredging through the bar existing there; but this last named sum shall not be expended unless, after another examination or survey, the Commission shall deem it advisable; and if they shall not, then $37,500 shall be expended in the improvement of navigation at Vicksburg by constructing suitable dikes and other appropriate works. * * *."

An allotment was made by the Commission, at their meeting in New York in September, 1886, of $2,500, to make the survey required, and it was intrusted to this office. The survey extended from below Vicksburg Harbor to the head of Paw Paw Island. It was finished in March, 1887, and on March 18, 1887, copies of my report, with accompanying maps, were sent to each member of the Commission.

Up to the end of the fiscal year no vote was taken on a project for this work. At a meeting of the Commission, held in New York in June and July, 1887, a project prepared by me was adopted by the Commission, and has since received the approval of the Secretary of War.

III. Greenville Harbor.

By the river and harbor act approved August 5, 1886, $37,500 was appropriated to prevent caving in front of the town of Greenville, Miss. An examination of the site was made by me, and a report rendered to the Commission at their meeting in September, 1886. It was decided by them that, owing to the small amount of the appropriation, no work should be done.

During the last high water considerable caving has taken place, and in April, 1887 by a vote of the people of Greenville, it was agreed to bond the city for $50,000 to assist in the work, provided the Mississippi River Commission would permit the appropriation to be spent; all work to be under this office. I prepared a plan for the work by revetting the bank, stating that in my opinion the work would last until the island above Greenville caved away. Assistant Engineer Hider prepared a project for the work, which I laid before the Commission.

At the meeting of the Commission in June and July, 1887, I was directed to prepare a project for this work by use of submerged dikes. In obedience to this order I submitted a plan which was adopted by the Commission, and which has since received the sanction of the Secretary of War.

IV. LEVEES.

The levees in the third district are called on the Mississippi side levees Yazoo Front, and on the Arkansas and Louisiana side levees Tensas Front.

Levees Yazoo Front.—Under an allotment of $12,000 made by the Board of Engineer Officers on Building and Repair of Levees, approved by the Secretary of War November 20, 1886, a portion of the Ben Lomond Loop was built under contract. Bids were opened November 29, and the contract awarded to J. L. Perkins, at 17 cents per cubic yard, the lowest bid received. The following is an abstract of bids received:

	Per cubic yard.
James L. Perkins, Duncansby, Miss	$0.17
George Arnold & Co., Memphis, Tenn	.17½
J. J. Cooney, Memphis, Tenn	.20
Thomas F. and Henry Duffin, Memphis, Tenn	.20

The contract was finished and the work accepted early in February, 1887. As the material composing this levee is poor sand and sand loam, it was deemed advisable to do some additional work in building a berme and a protection levee; this was done by days' labor and by verbal agreements during high water.

As immediately connected with these levees, a survey was made of the caving bank in the vicinity of Lake Bolivar, where the large levee is threatened. The Secretary of War approved of using a portion of the allotment for this purpose. A report on this survey was forwarded, with map and estimate for protecting the bank, to the Commission May 18, 1887.

At Arkansas City the levees on the banks of the river approach within about 1 mile of each other. It was deemed well to measure the discharge here. The following was found:

Date.	Location.	M. R. C. engineer's gauge.	Slope per foot.	Mean velocity per second.	Area.	Discharge per second.
1887.			*Foot.*	*Feet.*	*Sq. feet.*	*Cu. feet.*
Mar. 22	Arkansas City	46.59	.000081	6.138	232,993	1,430,111
23	do	46.60	.000080	6.287	233,555	1,466,369
24	do	46.61	.000081	6.023	247,655	1,491,7[illegible]
25	do	46.63	.000078	(!)5.856	(!)240,921	(!)1,410,533
26	do	46.63	.000076	6.122	234,187	1,433,[illegible]
26	do	46.63	.000076	6.052	234,187	1,417,[illegible]
Apr. 19	Wilson's Point	23.40	.....	3.968	139,309	552,727

Levees Tensas Front.—On this front levees were built in whole or in part under this office from Amos Bayou to Linwood, a loop at Leland, and topping near Lakeport, all in the State of Arkansas. In addition to this, several loops were built in Louisiana under the local organizations.

Amos Bayou to Arkansas City.—It was estimated that to close the gaps in this line and to raise the existing levee to a grade of 1 foot above the high water of 1882 $35,000 would be needed. An allotment of this amount was made by the Commission at their meeting in New York, September 1886. It received the approval of the Secretary of War on November 5, 1886. The work was advertised, and on November 16, 1886, a contract entered into with the Tennessee Industrial Company to do the work for 22 cents per cubic yard.

	Per cubic yard.
George Arnold & Co., Memphis, Tenn	$0.26½
J. C. Cooney, Memphis, Tenn	.28
Tennessee Industrial Company, by John Q. Adams, president, Memphis, Tenn	.22
Thomas F. Duffin and Henry Duffin, Memphis, Tenn	.27

The work was begun on November 22, with every prospect of having the levee in good condition for the expected high water. Owing, however, to bad management and bad weather the rise came even before the gaps had been closed. By strenuous efforts the gaps were closed in face of the water, although in several places the river flowed through for several hours. After the high water was over a thorough reorganization of the force was made, but up to June 30 only about 130,000 cubic yards have been placed. It is believed that this contract will be completed early in August, 1887. To this levee I have given the name of the Opossum Fork Levee.

Levee from Arkansas City to Gaines Landing.—This levee is known by several names applied to parts of it, such as the "Winter," the "Eunice," the "China," etc. For convenience I call this whole line the Eunice Levee.

This work was superintended under this office, and the work done by Duffin Bros., of Memphis, Tenn., under a contract made by the Tensas Basin Levee commissioners, of Louisiana, at 26 cents per cubic yard. Work was begun in December, 1886, and continued until stopped by high water in March, 1887. The principal gaps closed were at Old Eunice Landing and at Boggy Bayou; 130,751 yards were finished. After high water work was suspended, and will be resumed in September.

Panther Forest Levee.—This levee is intended to close the gap existing between Gaines Landing and Linwood, Ark.

This work was advertised and contract awarded to the lowest bidders, George Arnold & Co., of Memphis, Tenn., on November 29, 1886, at 19 cents per cubic yard. Abstract of bids received follows:

Name and address of bidder.	Price per cubic yard.	
	To be finished March 20, 1887.	To be finished December 25, 1887.
	Cents.	*Cents.*
Robert E. Craig, Chicot, Ark	30	22½
Thomas O'Malley, Donaldsonville, La	27	25
Tennessee Industrial Company, Memphis, Tenn	27	24
John S. McTighe, Isaac L. McKee, Memphis, Tenn	30	22
George Arnold & Co., Memphis, Tenn	22½	19
John McGinty, New Orleans, La	24	20
Thomas F. Duffin & Bro., Memphis, Tenn	.....	21½

Work was begun early in January and prosecuted until stopped by high water. It was resumed April 25, and is now being pushed; 70,000 cubic yards have been placed. After beginning this work it was found advisable, on account of threatened banks and bad material, to change the location. As this change increased the amount of clearing very materially and decreased the size of levee in the open, a supplementary contract was made, giving the contractors $60 per acre for clearing. This contract was approved by the Secretary of War on March 2, 1887.

Leland Short Line.—This work was advertised and contract made with Stansell and Forrest, of Memphis, Tenn., on December 25, 1886, at 17¾ cents per cubic yard, to be finished March 20, 1887. Abstract of bids received follows:

Name and address of bidder.	Price per cubic foot.	
	To be finished March 20, 1887.	To be finished December 25, 1887.
	Cents.	*Cents.*
Robert E. Craig, Chicot, Ark	18	16¾
Daniel T. Hartnett, Memphis, Tenn	.....	25
Riley & Walsh, Saint Louis, Mo	19	18¾
P. H. Winters, P. Cooney, Memphis	.....	19¾
L. C. Dulaney, Rosedale, Miss	.....	13 9/10
Thomas O'Malley, Donaldsonville, La	27	25
Tennessee Industrial Company, Memphis, Tenn	26	23
John S. McTighe, Isaac L. McKee, Memphis, Tenn	30	22
Michael Hughes, Vicksburg, Miss	23	19
George Arnold & Co., Memphis, Tenn	20	17
John McGinty, New Orleans, La	19½	17½
Thomas F. Duffin & Bro., Memphis, Tenn	.....	18
William M. Forrest, Jeptha W. Stansell, Memphis, Tenn	17¾	.....

Work was begun early in January, but owing to the over-confidence of the contractor was not finished on time. This levee, although at that time above the level of the water, broke on March 21, flooding the country immediately behind. After the subsidence of the water work was again resumed, and it was finished and accepted on May 17, 1887.

With a protection levee that it was found necessary to build, and ditches for draining the site, the yardage in this levee was 98,000 cubic yards.

Lakeport Levee.—This work, superintended under this office, was done by Mr. Ford, of Lakeport, Ark., under contract made by the Chicot County levee board. The only work was topping and enlarging near Lakeport. Cost, $2,339.

Protection of levees from damage during high water.—The Board of Engineer Officers on Building and Repair of Levees allotted $18,000 to that purpose in the third district.

During high water sacks, lumber, and other supplies were purchased, and the steamers *Vidalia* and *Meteo* were used for moving them and laborers to threatened points.

A break occurred at the Bigg's Levee, Louisiana, nearly opposite Vicksburg. The ends of the break were revetted. The break at Leland was similarly treated. Some work was done all along the levees in Arkansas, but especially at the Opossum Fork Levee. Here the struggle was severe; the water rose from ½ to 1½ feet above any previous water, and it was only by most persevering and incessant work that the line was held. Thirty-six thousand sacks and several thousand feet of lumber were used. From 300 to 400 men were employed. In this case the judgment and energy of Assistant Engineer Tollinger, Rodman Kilpatrick, and Inspector Coney, can not be too much commended. Mr. H. C. Smith, an employee of the contractors, and Mr. Ross, on the part of the Desha County levee board, were of the greatest service.

Below Arkansas City, on the Eunice Levee, Assistant Engineer Goodrich and Inspector Currie held the line, and by great exertion prevented much loss, especially in unfinished parts.

There was expended on all the levees about $13,000.

Financial statement, third district, from November 1, 1886, *to June* 30, 1887.

LAKE PROVIDENCE REACH.

Allotment	$270,000.00	
Transferred from Delta Point allotment	1,000.00	
Deposit for overpayment	.20	
		$271,000.20
Expenditures:		
Services	24,927.55	
Fuel	5,249.88	
Plant, tools, and repairs	3,228.75	
Material and supplies	277.33	
Subsistence	2,819.44	
Repayment to other allotments	2,521.50	
Miscellaneous	1,280.36	
	40,304.81	
Liabilities	3,217.63	
		43,522.44
Available balance		227,477.76

REPAIRS TO FLOATING PLANT.

Allotment		30,000.00
Expended prior to November 1		3,162.85
Balance		26,837.15
Expenditures:		
Services	$13,639.08	
Plant, tools, and repairs	10,627.97	
Subsistence	1,811.29	
Material and supplies	257.75	
Miscellaneous	501.06	
		26,837.15

VICKSBURG HARBOR.

Available balance November 1		60.59
Expenditures:		
Plant, tools, and repairs	$56.13	
Miscellaneous	4.46	
		60.59

SURVEY, VICKSBURG HARBOR.

Allotment	$2,500.00	
Expended prior to November 1	5.05	
		$2,494.95
Expenditures:		
Services	1,936.41	
Miscellaneous	103.19	
Subsistence	75.67	
Material and supplies	26.43	
Plant, tools, and repairs	14.25	
Fuel	9.00	
Charter boats and barges	330.00	
		2,494.95

REPAIR OF DELTA POINT, LOUISIANA.

Allotment		$5,000.00
Expenditures:		
Services	$3,061.98	
Miscellaneous	153.32	
Subsistence	472.78	
Material and supplies	182.77	
Plant, tools, and repairs	2.75	
Fuel	94.50	
Transferred to Lake Providence allotment	1,000.00	
		4,968.10
Balance		31.90

LEVEE, AMOS BAYOU TO ARKANSAS CITY.

Allotment		38,500.00
Expenditures:		
Services	$1,827.83	
Contractors' estimates	25,542.00	
Miscellaneous	740.16	
	28,109.99	
Liabilities	3,390.01	
		31,500.00
Available balance		7,000.00

LEVEES, ARKANSAS CITY TO LOUISIANA LINE.

Allotment		94,920.86
Expenditures:		
Services	$3,420.24	
Contractors' estimates	26,620.46	
Plant, tools, and repairs	5.25	
Miscellaneous	611.72	
	30,657.67	
Liabilities	14,263.19	
		44,920.86
Available balance		50,000.00

LEVEES, YAZOO FRONT—BEN LOMOND HOOP.

Allotment		12,000.00
Expenditures:		
Services	$2,046.82	
Contractors' estimates	7,390 05	
Material and supplies	961.76	
Plant, tools, and repairs	27.37	
Subsistence	31.50	
Miscellaneous	325.73	
		10,783.23
Available balance		1,216.77

LEVEES, TENSAS FRONT.

Amount available November 1		213.90
Expenditures:		
Plant, tools, and repairs	$125.60	
Miscellaneous	44.42	
		170.02
Available balance		43.88

PROTECTION OF LEVEES.

Allotment		$18,000.00
Expenditures:		
Services	$8,589.19	
Material and supplies	3,347.28	
Subsistence	411.84	
Plant, tools, and repairs	255.46	
Fuel	176.92	
Charter of steamers and barges	43.50	
Miscellaneous	252.83	
		13,077.02
Available balance		4,922.98

RECAPITULATION—AVAILABLE BALANCES JUNE 30, 1887.

Lake Providence Reach	227,477.76
Opossum Fork Levee	7,000.00
Arkansas City to Louisiana line	50,000.00
Ben Lomond Hoop	1,216.77
Repairs of Delta Point	31.90
Levees, Tensas Front	43.88
Protection of levees	4,922.98

By reallotment of the Commission June 30 and July 1, 1887, the available balance for Lake Providence Reach was decreased to $28,000; Opossum Fork Levee increased to $60,000, and the following additional allotments made, viz:

Vicksburg Harbor	$72,500
Greenville Harbor	37,500
Repairs to Delta Point	10,000
Protection of existing works	25,000

Approximate value of plant belonging to the United States and used upon the improvement of the Mississippi River, third district.

Class of property.	No.	Approximate value June 30, 1887.
Steam tow-boat *Osceola*	1	$17,000
Steam tow-boat *Vidalia*	1	15,000
Steam tow-boat *Emma Etheridge*	1	11,000
Survey-boat *Meter*	1	6,000
Hydraulic graders	2	30,000
Mattress-boats:		
160 by 30 feet	6	14,400
140 by 49 feet (old)	1	800
Screen-boats	4	3,000
Quarter-boat (with outfit):		
135 by 30 feet	1	3,200
130 by 25 feet	10	25,000
100 by 30 feet	1	1,800
80 by 20 feet	2	2,800
70 by 18 feet	1	400
Machine-shop boat	1	4,500
Machine-shop boat (old)	1	250
Carpenter-shop boat, with outfit	1	2,700
Floating dry-dock, with machinery	1	3,000
End-docks, 37 by 16 and 27 by 8 feet	2	850
Pump-boat and machinery	1	800
Small scows	2	50
Barges (decked and scow-built)	35	44,320
Barges (model)	10	32,725
Pile-drivers (with machinery)	16	44,600
Catamaran	1	75
Calking-flats	9	100
Yawls	7	400
Skiffs	34	272
Coal barges and boats (old)	12	2,400
Tools and appliances (including drawing instruments)	.....	720
Surveying instruments	.....	2,000
Total	.....	283,222

List of civilian engineers employed on works of river and harbor improvement in charge of Capt. William T. Rassell, Corps of Engineers, U. S. A., from October 31, 1886, *to June* 30, 1887, *inclusive, under the river and harbor appropriation act approved August* 5, 1886.

Name and residence.	Time employed (months).		Compensation per month.	Where employed.	Work on which employed.
	M.	*d.*			
Arthur Hider, Louisville, Ky.	8		$200	Wilson's Point, La.	In local charge of and superintending repairs to fleet.
William M. Childs, Chicago, Ill.	4	13	150	Wilson's Point, La.	Survey of Lake Providence reach.
				Bolivar, Miss.....	Survey of Bolivar Landing.
				Arkansas City, Ark	In charge of current observations.
C. P. Ruple, near Wilson's Point, La.	5	14	150	Wilson's Point, La.	In charge of survey Lake Providence reach and preparation of maps.
H. St. L. Coppée, Vicksburg, Miss.	4 2		175 125	Vicksburg, Miss...	In charge of survey of Vicksburg Harbor and repairs to Delta Point, La.
E. C. Tollinger, Wrightsdale, Pa.	7	20	150	Near Arkansas City, Ark.	In charge of construction and repair of levee from Arkansas City to Amos Bayou.
Henry Goodrich, Lake Providence, La.	5	18	150	Gaines Landing, Ark.	Construction of Eunice levee, Ark.
				Linwood Landing, Ark.	Construction of Panther Forest levee, Ark.
James Elliott, Memphis, Tenn.	1	9	150	Linwood, Ark.....	Construction of Panther Forest levee.

Respectfully submitted,

WM. T. ROSSELL,
Captain of Engineers.

APPENDIX F.

REPORT OF CAPTAIN DAN C. KINGMAN, CORPS OF ENGINEERS, UPON OPERATIONS IN THE FOURTH DISTRICT.

UNITED STATES ENGINEER OFFICE,
New Orleans, La., July 30, 1887.

COLONEL: I have the honor to transmit herewith my report of operations for fiscal year ending June 30, 1887, for works in my charge in the fourth district, Mississippi River.

Very respectfully, your obedient servant,

DAN C. KINGMAN,
Captain of Engineers.

COL. Q. A. GILLMORE,
Corps of Engineers,
President Mississippi River Commission, New York City.

REPORT.

The charge of the fourth district, Improving Mississippi River, was transferred to me by Maj. Charles W. Raymond, Corps of Engineers, on December 4, 1886, by virtue of Special Orders No. 265, paragraph 6, Headquarters of the Army, Adjutant-General's Office, dated Washington November 13, 1886.

I.—IMPROVEMENT OF THE HARBOR AT NEW ORLEANS, LA.

The adopted projects for work in New Orleans Harbor are, first, to cover the caving bank in the Carrollton Bend, for a distance of 10,000 linear feet, with a mattress of willow brush, ballasted with stone; second, to protect the portion of bank known as the Gouldsboro Bend, about 5,000 linear feet, by means of sloping submerged spurs, made mostly of brush and stone, and placed at intervals, which are as yet

experimental, varying from 500 to 1,600 feet. It is also proposed to protect in like manner the Gretna Bend and the Great Bend above Gretna.

At date of last annual report, June 30, 1886, the condition of the work was as follows:

A small portion of the brush mattress in the Carrollton Bend had been laid. Two spurs had been completed, and the foundation mattress and two cribs of a third had been placed in the Gouldsboro Bend.

A plant for the mattress work had been acquired, and nearly all the stone for ballast, iron rods, and other material, except brush, for the completion of the six spurs originally contemplated in the Gouldsboro Bend was on hand.

A survey had been made, which developed the fact that the 100-foot contour had been thrown out from the bank, and that the spurs were in good condition and apparently accomplishing the results for which they were built.

Owing to lack of funds no work had been done since November, 1884, except such as was necessary for care and preservation of property.

On August 5, 1886, additional funds were appropriated by Congress, and a project for continuance of the work was prepared and submitted to the Commission. It was approved September 20, 1886.

This project was in substance as follows:

(1) To place the plant in serviceable condition.

(2) To re-survey the site of the spurs built and to be built in the Gouldsboro Bend, to ascertain whether changes had taken place which would make a re-location of the unconstructed spurs desirable.

(3) To complete the unfinished spur and construct the three remaining spurs.

The commission directed the new spurs to be built first, so as to take advantage of low water, and complete the unfinished spur afterwards, which it was thought could be done at high water.

On October 6, 1886, the work of repairing the plant was commenced. Owing to the length of time that the barges and boats had been laid up these repairs were quite extensive, and the plant was not ready for service until the latter part of November.

The survey of the Gouldsboro Bend was commenced October 14 and completed November 3. The whole area under improvement was carefully sounded. The condition of the spurs already built was found to be good, and no changes that would render necessary a re-location of the unconstructed spurs were developed.

The spurs built in the fall of 1884 were numbered, respectively, 2, 3, and 5, the last being incomplete, consisting of a foundation mattress and two cribs. On November 29, 1886, the construction of Spur Dike No. 1 in the Gouldsboro Bend was commenced, but it was not completed until January 6, 1887, owing to the slow delivery of brush by the contractors.

Construction of Spur No. 6 was commenced January 7, 1887, and it was completed on February 3, 1887. By this time the river had commenced to rise and heavy drift was running, making the work of sinking the mattress and cribs exceedingly difficult and expensive. It was intended to finish Spur No. 5 (partially completed in 1884), and three cribs had been built for that purpose. The plant was moved into position on February 7, but owing to the great quantity of heavy drift running it was found to be impossible to sink the cribs on the spur. As the cribs would otherwise have been lost it was decided to sink them immediately below Spur No. 3. Accordingly the three cribs were sunk so as to carpet the bank from a low-water depth of 35 feet to a depth of 75 feet. The up-stream ends of the cribs lapped upon the foundation mattress of Spur No. 3.

The season's work resulted in the completion of two new spurs, Nos. 1 and 6, which is rather more than was expected, considering the lateness of the season when work was commenced.

There were constant delays caused by the slow delivery of willow brush by the contractors, and the cost of the work was thereby somewhat increased.

The methods of constructing and sinking the mattresses and cribs were the same as in 1884, except that the cribs were built and launched from floating ways instead of on ways on the bank. The float had just enough buoyancy to support the crib timbers and the first layer of willow brush. This method was found to be cheaper and better than the old one.

The average cost of Spurs Nos. 1 and 6, exclusive of cost of plant, was $10,460. Less than half the quantity of rock per spur was used than in 1884. This sum represents the actual cost of the spurs, and does not cover the office expenses or the care of plant when not in use.

On February 14 all work on spur-dikes was suspended, and the plant moved to secure laying-up quarters. All the tools and material were placed in good condition and stored in readiness for next season's work. An amended project, which was approved (see report on rectification of Red and Atchafalaya rivers), called for the repairing of the barges composing the old mattress ways. Accordingly the ways have been taken off, the barges disconnected, repaired, and decked for use as stone and

willow barges. The hull and machinery of the launch *Alaska* have been repaired, and a new boiler is being built for her.

The total amount expended to June 30, 1886, is $150,199.40.

The estimated amount required for completion of the work in New Orleans Harbor is $620,000.

The amount that can be profitably expended during the fiscal year ending June 30, 1889, is $100,000.

The work is in the collection district of New Orleans.

The nearest light-house is at the mouth of the Mississippi River.

The collector of the port furnishes the following statistics of the commerce of New Orleans:

CUSTOM-HOUSE, NEW ORLEANS, LA.,
Collector's Office, July 9, 1887.

SIR: In accordance with your request of the 22d ultimo, I submit herewith statements showing the transactions of customs business at this port during the fiscal year ending June 30, 1887:

Entrances and clearances of vessels during fiscal year ending June 30, 1887.

	Entered.		Cleared.	
	No.	*Tons.*	*No.*	*Tons.*
Steam-vessels	758	980,493	676	977,395
Sailing vessels	301	177,033	251	160,882

Imports and exports during fiscal year ending June 30, 1887.

IMPORTS.

Bullion	$58,195
Coin	194,246
Merchandise, free	5,242,907
Merchandise, dutiable	4,408,777

EXPORTS.

Foreign	479,071
Domestic	78,958,192
Total value of exports	79,437,263
Duties collected on imports	2,312,930
Customs receipts from all sources	2,367,502

* * * * * * *

Very respectfully,

B. F. JONAS, *Collector.*

Capt. D. C. KINGMAN,
United States Engineer Office, 3 S. Rampart Street, New Orleans, La.

FINANCIAL STATEMENT.

Improving Mississippi River (no limit)—New Orleans Harbor.

July 1, 1886, amount available		$2,007.65
Act of August 5, 1886, allotment		75,000.00
Total		77,007.65
July 1, 1887, amount expended during the fiscal year, exclusive of outstanding liabilities, July 1, 1886	$39,535.25	
July 1, 1887, outstanding liabilities	764.22	
		40,299.47
July 1, 1887, balance available		36,708.18

II.—RECTIFICATION OF RED AND ATCHAFALAYA RIVERS.

At the date of last annual report, June 30, 1886, no work was in progress at this locality.

No work in pursuance of any project for the permanent improvement of the rivers in this locality had been done, but each year temporary expedients had been resorted

to, to maintain a low-water channel through Old River between the Mississippi and the Red and Atchafaylaya. These expedients did not always meet with success, and sometimes navigation was totally suspended.

Previous to the passage of the river and harbor act of August 5, 1886, no funds were available either for work at the mouth of Red River or for preparation therefor. The condition of things in this locality was, however, a matter of great solicitude to this office very early in the season. On August 2, 1886, report was made to the Commission as follows:

"Soundings made by steam-boat men in passing through Old River indicate that the channel from the Mississippi river to the crossing has silted up considerably during the past season's high water. Considering the rapid fall of the Mississippi River, it is probable that the navigation of Old River will be greatly obstructed if not entirely suspended before the end of August."

Instantly upon the passage of the river and harbor act, a report was submitted giving a statement of the condition of Old River on August 1. There was then a depth of 8 feet on the bar at the mouth, 7 feet near Ash Cabin, 4½ feet on the crossing, and 18 feet from the crossing to the head of the Atchafayala. The river was falling at the rate of 6 inches per day, and there was a difference of level of about 1 foot between the two gauges at Red River Landing and at Barbre's, indicating a probable suspension of navigation by August 15. It was stated that there was a slight possibility of keeping the channel open if work was commenced without delay.

The headquarters of this office had been temporarily transferred to New York City, and on August 8 Maj. Chas. W. Raymond, then in charge, called personally on the president of the Commission, who, in anticipation of the approval of the Commission and of the Secretary of War, gave verbal orders to begin work at the earliest possible moment. Orders were immediately telegraphed to the assistant at New Orleans, who had been previously instructed to hold himself in readiness for immediate action, to commence preparations. But for this assumption of responsibility, it is reasonably certain that no work whatever would have been possible the past season in the channel of Old River.

The steamer *General Newton*, the only suitable vessel at the disposal of this office, was in such bad condition that she was not believed to be fit for service. She had been severely strained by the work of previous years, and no money had been available for her repair. However, as it was found practically impossible to charter a suitable boat, she was hastily strengthened for temporary use.

Preparations were pushed with such energy that the *Newton*, fully equipped, left for Red River on August 12, seven days after the passage of the river and harbor act.

In the mean time authority to borrow plant from the third district had been obtained, and, upon application, Captain Rossell promptly sent a pile-driver and three small barges to the mouth of Red River.

In anticipation of the breaking down of the steamboat *General Newton*, which was liable to occur at any time, application was made for the steamer *Osceola*, belonging to the third district, but temporarily employed in the service of the Missouri River Commission. She was at work in the Missouri River, but was sent to the mouth of Red River with great promptness by the secretary of the construction committee. She arrived on September 13, and relieved the *Newton*, which boat returned to New Orleans for necessary repairs.

The working party arrived at the mouth of Red River on August 14, and as soon as the scraping apparatus could be rigged on the steamer, the channel examined, and a method of operations determined on, work was commenced August 17. From that time until October 28, when navigation was suspended, the work was vigorously carried on.

The methods employed were as follows: On the bar, at the mouth, the scraper was used until all the mud was removed. This method then being of no further use, piling was driven on the bar, to which the boats were secured, and the sand was washed away by turning their wheels with the current. A dike was constructed at the mouth to prevent the return of Mississippi water to the Mississippi after it had entered the mouth of Old River. At all wide places clear through to the Atchafalaya pile-dikes were built for the purpose of contracting the channel and producing scour. In all about 2,600 feet of pile-dike work was built.

These methods were successful until September 29, when the banks near Ash Cabin commenced sliding. This action forced up mud lumps and ridges in the channel, which, as the sliding increased in amount, became more and more difficult to remove. When it was no longer possible to remove these by the methods above mentioned, they were blown up with dynamite, but the rapid fall of the river and the continued rising of the lumps and ridges finally caused even this method to fail.

On October 28 further effective work by any of the above methods became impossible and navigation was virtually suspended.

The result of the work done by the United States during the past season in Old River is that a navigable channel was kept open for at least two months, during

which it would otherwise have been closed. On August 16, prior to the commencement of work, the channel had a least depth of 30 inches, the Red River Landing gauge reading 11.6 and the Barbre's Landing gauge 8.2. On September 30 there was the same least depth, although the river at Red River Landing had fallen to 6.1, and at Barbre's Landing to 3.5, and this was entirely due to the work done. On October 28, when navigation was virtually suspended, the Red River Landing gauge read 3.3. The lowest point reached during the season of 1885 was 6.4, when there was a 4-foot channel only.

The shoal water during the low-water season of 1886 was not as heretofore confined to two or three bars or flats, but was almost continuous from the Mississippi to the head of the Atchafalaya. It seems highly probably that the difficulty of maintaining navigation through Old River by dredging will increase from year to year, owing to the silting up of the channel.

Mr. H. S. Douglas, assistant engineer, was in immediate charge of the work, and for additional details I refer to his report herewith.

On August 21, 1886, a project was called for by the president of the Commission for the expenditure of the allotment of $187,500 for the "rectification of the Red and Atchafalaya rivers, by preventing further enlargement of the latter stream and restricting its outlet capacity, and for keeping open a navigable channel through the mouth of Red or Old River into the Mississippi."

A project was prepared in accordance with the general plan of the Commission (see Report of the Mississippi River Commission for 1884, page 26), and submitted to the Commission at its meeting in New York, September 20, 1886, as follows:

ROOM 52, ARMY BUILDING,
New York City, September 20, 1886.

COLONEL: In obedience to instructions contained in your letter of August 21, 1886, I have the honor to submit the following project for the commencement of work upon the "Rectification of the Red and Atchafalaya rivers," in conformity with the plans of the Mississippi River Commission. For this work and for keeping open the low-water channel in Lower Old River the sum of $187,500 is allotted in the act approved August 5, 1886.

The sum of $15,000 has already been allotted by the Commission for keeping open the channel of Old River during the present season, and it will probably all be expended. It is believed that the Commission will desire to reserve an equal sum for the same purpose during the next season. This leaves the sum of $157,500 available for application to the work proposed at the mouth of the Atchafalaya.

The plan of the Commission, so far as it relates to present work, contemplates the construction of six low dams in the Atchafalaya, which are to be begun by laying the sill-courses for all of them. (*Vide* Report of the Commission for 1885, page 2869.) The conditions which these dams must satisfy are stated in the report of the Commission for 1884, page 2560, and may be summarized as follows:

(1) They must all be located below the Bayou des Glaizes, the intervals between them not exceeding one-quarter of a mile.

(2) They must be built up to just below low water.

(3) Their height and the width between spurs is to be so adjusted that they shall permit the passage down the Atchafalaya of a volume equal to the flood discharge of Red River.

(4) The sills are to be not less than 300 feet wide up and down stream, and are to extend transversely up to the high-water banks. The dams are to be built upon them with concentric and diminishing cribs like those employed in New Orleans Harbor.

The following method of constructing and placing the sills for these dams is adopted for the purpose of estimating the cost of the work. It was prepared upon the ground by Assistant Engineers H. S. Douglas and W. G. Price under my specific instructions. It may be greatly modified as the result of experience in actual construction.

Each sill is to consist of a continuous series of ballasted mattresses, 300 feet wide up and down stream, extending to high-water mark from bank to bank, and cribs placed upon the mattresses at the banks, so as to form slopes of 1 on 3 from low-water mark to deep water. Before placing the mattresses the banks between high and low-water limits are to be graded to a slope of 1 on 3.

It is proposed to construct and place the mattresses as follows: Ways will be built at a convenient point above the site of the dams, upon which the mattresses will be constructed. Each mattress will be 18 inches thick, 300 feet long, and 75 feet wide. One foot of the thickness will be willow brush, the alternate courses laid at right angles to each other and tightly compressed, and 6 inches will be poles crossing each other at right angles, so as to form pockets for holding the stone ballast. The completed mattress will be launched and towed to its position, where it will be moored between barges loaded with stone, and sunk.

Commencing at the down-stream edge of the sill, it is proposed to lay a series of these mattresses end to end, so as to form a strip 75 feet wide entirely across the river.

Just above this, and possibly overlapping it, a similar strip will be laid, breaking joints with the first. Other strips will be laid in a like manner until the desired width of 300 feet has been attained. A second course of mattresses of similar dimensions will be then laid upon the first, being placed with their greatest length parallel to the current and across the first at right angles, so as to cover effectually any openings which might permit scour.

The cribs, to give a slope of 1 on 3 at the banks, will be placed upon the mattresses in the manner employed at New Orleans Harbor. These cribs are regarded as an essential part of the sill, and should not under any circumstances be omitted.

The probable cost of a single sill, exclusive of plant, is determined approximately as follows:

(1) *Grading the banks above low water.*—The present slope is generally very steep, and must be graded to a slope of 1 on 3 at each sill. The amount of excavation required has not yet been definitely determined, but is estimated at about 5,000 cubic yards at each sill. If a hydraulic grader can be borrowed from some other district this can be removed for about 2 cents per cubic yard, or about $100 per sill.

(2) *Mattress work.*—The average width of the river between high-water banks immediately below Bayou des Glaizes is about 1,300 feet, and the average length of the foundation mattress work, measured along the high-water wetted perimeter, will be about 1,400 feet. Hence each sill contains about 1,260,000 cubic feet of mattress work. Its cost in place is estimated at 5 cents per cubic foot. The total cost for each sill is therefore $63,000.

(3) *Cribs.*—The number of cribs required will be determined by the existing slope of the bank below low water in each locality. This is not definitely known, but it is estimated that 80,000 feet of crib-work will be required at each sill. The last cribs sunk in New Orleans Harbor cost 3.56 cents per cubic foot. At this price the cost of cribs in place for each sill will be $2,848.

The estimated cost of a single sill is therefore as follows:

Grading above low water	$100
Mattress work	63,000
Cribs	2,848
Total	65,948

The plant required for the work is as follows: Six barges for lowering mattresses and cribs, six general service barges for handling stone at the work, twenty-five barges for the delivery of stone and brush by the contractors, one propeller tug-boat for towing mattresses into position and handling plant, about 10,000 pounds of rope for lowering lines, etc.: Tools for mattress construction. It is assumed that such portions of the necessary outfit as are now on hand in the district will be used; for example, cooking utensils, blankets, ticks, lumber, etc. Temporary quarters will be required for the laborers. The cost of this plant is estimated as follows:

6 lowering barges, at $3,200 each	$19,200
6 stone barges, at $1,800 each	10,800
25 brush and stone barges, at $1,800 each	45,000
Tug-boat, about	7,000
Quarters for laborers, about	2,000
Rope, tools, etc	3,000
Total	87,000

Deducting the cost of plant from the amount available ($157,500) there remains $70,500, which is just about sufficient for the construction of a single sill.

The present working season is now so far advanced that little, if any, actual construction can be undertaken before the high water of 1887. I recommend that a survey of the site of the proposed sills be made at once; that the necessary plant be constructed or purchased; that the necessary quarters be constructed, and that arrangements be perfected for the supply of materials. The construction of a single sill is also recommended, should the Commission think proper to waive the condition expressed in its report of 1885.

Very respectfully, your obedient servant,

CHAS. W. RAYMOND,
Major of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

This project was approved by the Secretary of War, October 1, 1886.

On March 14, 1887, for the reasons therein stated, the following modification of the original project was submitted:

UNITED STATES ENGINEER OFFICE,
New Orleans, La., March 14, 1887.

SIR: The approved project for the commencement of work upon the "Rectification

of the Red and Atchafalaya rivers" calls for the construction or purchase of the following plant:

6 lowering barges, at $3,200 each	$19,200
6 stone barges, at $1,800 each	10,800
25 brush and stone barges, at $1,800	45,000
1 tug-boat, at $7,000	7,000
Quarters for laborers	2,000
Rope, tools, etc	3,000
Total	87,000

After a careful study of the details of the work, and examination of the locality where the improvement is to be made, I have the honor to recommend the following modifications:

(1) That the laborers be lodged in quarter-boats instead of in huts on the bank. These boats can be moved about as may be necessary and moored in the most convenient places, so that the laborers need lose no time in going to and from their work. I have been informed by the district officers above that they have quarter-boats in excess of their requirements, and that, with the approval of the Commission, they could lend me two or three for this work.

(2) In regard to floating plant: The six lowering barges are now being built by contract at a cost of $2,787 each; when completed with capstans, etc., they will cost about $2,900, which is a little less than the estimate. The project, in addition, calls for thirty-one brush and stone barges at a cost of $55,800. I do not think that all of these are necessary, as I propose to collect all the stone that will be required and store it at some convenient place before the work is begun. I think, therefore, that eleven brush and stone barges will be all that will be required.

To obtain them: In the floating plant pertaining to New Orleans Harbor was an arrangement of eight barges, 20 feet by 100 feet each, rigidly framed together and provided with ways for the construction of continuous mattresses. This affair has been used during the past season in the construction of mattresses for the spur-dikes in the Gouldsboro Bend, but it is not very well adapted to this work, as it is very hard to move about; and, also, as the barges are placed side by side all the brush in the work has to be carried the whole length of a barge, thereby increasing the number of laborers required in mattress construction. These barges are beginning to decay and the ways are also giving out, and it has become necessary to separate them in order to repair and calk them. Now, if these barges were put in order, which could be done by hired labor and making use of such of the old material as is suitable, at a cost of about $1,300 for the eight, they would then make excellent brush and stone barges for the Atchafalaya.

I would therefore propose to build three barges of the model shown in the accompanying photograph, which will cost altogether about $10,000, and exchange them for the eight barges above described. This would give me an admirable mattress plant for New Orleans Harbor, and eight good barges for the Atchafalaya. The barges I now have are too narrow to have the ways placed on them, as shown in the photograph.

I would then propose to build three brush and stone barges for the Atchafalaya at a cost of $1,800 each.

The means of communication with Simmsport are exceedingly slow and uncertain. The nearest telegraph and railroad stations are at West Melville, where the Texas and Pacific Railroad crosses the Atchafalaya and Bayou Sara on the Mississippi. The former is 25 and the latter 50 miles away. In order to keep this office in daily communication with the work, I propose to repair the iron steam launch *Alaska*, belonging to New Orleans Harbor, and use it as a dispatch boat between West Melville and Simmsport. When not so employed it would be very useful in towing mattresses, etc. The launch requires a new boiler and certain minor repairs, which will cost in all about $500.

To recapitulate:

6 lowering barges, at $2,900 each	$17,400.00
3 brush and stone barges, at $1,800 each	5,400.00
Repairing 8 barges, at $1,300	1,300.00
Repairing launch *Alaska*, $500	500.00
Tug-boat	7,000.00
3 mattress barges for New Orleans Harbor	10,000.00
Total	41,600.00
Present project	87,000.00
Saving	45,400.00

For the maintenance of the low-water channel through Lower Old River during the coming season, I purpose to employ the steam-boat *General Newton* in scraping as

heretofore, and, with the approval of the Commission, to borrow a pile-driver from one of the districts above, to be used in the construction of temporary spur dikes. I shall also make use of the launch *Ruby* as it may be required. I think it would be advantageous to the service if the Commission would cause a serviceable pile-driver to be permanently transferred to this work.

The tug *Tilda*, belonging to New Orleans Harbor, has been recently inspected and the hull found to be in very bad condition. It will cost to repair it about $500. I would request authority to put it in good order, paying from allotment for New Orleans Harbor.

I have at Carrollton a store-house which cost about $600. It is in danger of falling into the river on account of the caving bank. I would request authority to take it down and place it upon a barge. This will cost about $275. The barge could then be moored with the fleet, and the services of one watchman dispensed with.

If the above recommendations are approved, I would request that I may be notified as soon as possible, in order that the work of construction and repair may be commenced.

Very respectfully, your obedient servant,

DAN C. KINGMAN,
Captain of Engineers.

Col. Q. A. GILLMORE,
Corps of Engineers, President Mississippi River Commission.

This modification of the original project was approved by the Secretary of War, April 22, 1887.

The actual placing of the sills can only be done during low water. The lateness of the season when the allotment became available and the project for its expenditure approved, together with the large amount of preparation and plant required, rendered it impossible to do any actual construction on the sill dams during the low-water season of 1886.

The preparatory work done in accordance with the approved projects has consisted of a survey of the site of the proposed sills, the construction or purchase of all the necessary plant, and in making arrangements for a supply of the necessary stone for ballasting the sills.

On November 6, 1886, a survey party left New Orleans for the purpose of making a survey of the Atchafalaya in the vicinity of Simmsport, La., to obtain the necessary data to determine the most favorable location for the proposed sills. The survey was most thorough and elaborate, and it is believed that all the data necessary for the location of the proposed sills has been obtained. The field work was completed February 20, 1887. For details as to methods, etc., I refer to the report of Mr. W. J. Hardee, herewith.

Incidental to the survey, the cross-sections of the Atchafalaya between its head and Bayou des Glaizes, made in November, 1883, were repeated. The following comparative table gives the results:

Cross-sections of the Atchafalaya River between the mouth of the river and Simmsport.

Number of section.	Area.				Hydraulic radius.			
	1883.	1887.	Increase.	Decrease.	1883.	1887.	Increase.	Decrease.
			Per cent.	*Per cent.*			*Per cent.*	*Per cent.*
2	83,045	87,256	.048	.....	61.7	64.0	.035	.....
4	32,260	38,206	.15	.....	35.1	39.3	.10	.....
6	36,222	37,513	.034	.....	44.7	43.5	.....	.027
8	27,817	31,739	.12	.....	38.0	36.4	.....	.043
10	44,093	46,740	.056	.....	38.5	47.9	.19	.....
12	45,768	52,389	.12	.....	42.0	48.9	.14	.....
13	39,482	37,828	.....	.043	45.9	41.4	.....	.10

It will be noted that the enlargement of the Atchafalaya from November, 1883, to February, 1887, has been very slight. It seems fair to assume that this is due to the partial closure of the Tensas Front by levees. Appearances indicate that the influence of the leveeing of the Tensas Basin on the Atchafalaya problem has been very great. It is possible that the further enlargement of the Atchafalaya might cease entirely when the Mississippi, during floods, is prevented from overflowing into the Tensas Basin, provided the outlet capacity of Old River remained unchanged. This last could hardly happen, however, with the concentrated discharge that would take

place through Old River, and I am therefore of the opinion that the levees on the Tensas Front should not be extended further down the river until one or more sills have been placed in the Atchafalaya.

On January 25, 1887, plans and specifications having been prepared, proposals for the construction of the six lowering-barges, provided in the project, were opened and contract awarded. Work on the barges was commenced immediately, and five of them were completed June 30, 1887. The remaining one of the six barges will be completed July 9, 1887.

Proposals for building the three general-service barges were opened April 9, and contract awarded. Good progress has been made on them, and they will probably be completed by July 15, the date specified in the contract.

Proposals for building three large ways barges were opened April 19, and contract awarded. They are generally similar to the lowering-barges, with the exception of the ways. They are to be completed August 15, 1887.

The approved project provided for the purchase of a tug to be used in connection with this work. The requirement was made known to steam-boat men and parties having tugs for sale. A number of offers of tugs with description were received, and such as were thought suitable for the work were examined. An offer of a tug, called the *John Orr No.* 2, was received from Paducah, Ky., and after inspection the boat was purchased for $6,555, this amount being $500 less than that estimated in the project. A crew was sent to Paducah, and the tug was utilized to tow the quarter-boats and pile-driver, borrowed from the first district, to the mouth of Red River. She arrived there on June 27. The tug was brought to New Orleans to assist in towing the plant of barges, etc., to the Atchafalaya, and also to have some slight necessary repairs made to her machinery. The following is her description:

(1) The hull was built at Paducah, Ky., at the end of the year 1884, and commencement of 1885, of well-seasoned Kentucky oak, and is now in sound and good condition; the length is 73 feet by the inspector's report; 75 feet on deck; the beam is 15 feet, and the depth is 8 feet 6 inches. The date of the first inspection is the 13th of March, 1885, and of the last the 29th of November, 1886. The gross tonnage measurement is 77.41, the deduction 20.48, leaving a net tonnage of 56.93.

(2) The boiler is of longitudinal multitubular form and was built in 1884 by James Reese & Co., of Pittsburgh, Pa. It is of steel, with twenty 6-inch cylinders, double riveted and drilled holes; it was new when put into the boat in March, 1885, and it was last inspected on the 29th of November, 1886, when a maximum steam pressure of 122 pounds was allowed. The usual steam pressure carried is from 80 to 90 pounds, and to maintain this the average consumption of coal has been about 65 bushels a day. The coal used has been mostly slack.

(3) The engine, which is 16 by 16 inches, was built in 1884 by the Novelty Machine Works of Evansville, Ind. It was new when it was placed in the boat. The shaft is of steel, 5 inches in diameter, with three brace-bearings, and the diameter of the wheel is 5 feet 9 inches. The boat is fitted with a No. 6 Rival pump made by McDonald, of Cincinnati, Ohio, which has a capacity of 22 gallons a minute; it also has the necessary syphons and an extra hand-pump on deck.

(4) The coal-bunkers hold 600 bushels, and when they are full the boat draws 6½ feet. It is fitted with a balance-rudder 5 feet high, 4½ feet behind, and 18 inches in front.

Information was received that stone for ballast suitable for the proposed sill work could be found in the States of Mississippi and Louisiana in quarries easily accessible to the work. An examination of the different localities was made in the early part of February, and specimens of the different quarries were obtained on the ground for examination and test. Stone weighing 150 pounds per cubic foot was found near Boyce Station on the Texas and Pacific Railway, about 80 miles from West Melville on the Atchafalaya. An agreement with the parties owning the quarries has been made, and the stone is to be delivered on the banks of the Atchafalaya at West Melville, from which point it will be transported on barges to the locality of the sills as required. By this arrangement the number of barges required is greatly reduced, and the expense of unloading the stone on the bank at the sills, reloading it and then placing it on the mattresses is avoided. Under the present arrangement two ormore barge loads of stone will be brought up when required and unloaded directly on to the mattresses which are to be sunk.

Arrangements have been made to obtain three quarter-boats and a pile-driver from the first district, and should nothing unforeseen occur everything will be in readiness to commence work on the sills as soon as the river reaches a sufficiently low stage.

The amount expended in the execution of the approved project as modified to June 30, 1887, is $27,128.84.

The amount that can be profitably expended during the fiscal year ending June 30, 1889, is $200,000.

The work is in the collection district of New Orleans, which is the nearest port of entry.

COMMERCIAL STATISTICS.

All the river commerce of Red River, Bayous Macon and Tensas, Ouachita and Black rivers, the Atchafalaya, Bayous Courtableau and des Glaizes, together with numerous tributaries, and a large portion of the commerce of Bayou Teche, passes through Old River. The total value of the commerce to be benefited by the improvement is estimated at $40,000,000 annually.

FINANCIAL STATEMENT.

Improving the Mississippi River (no limit).

(*a*) Rectification of Red and Atchafalaya rivers:	
Act of August 5, 1886, allotment	$187,500.00
July 1, 1887, amount expended during the fiscal year ending June 30, 1887	27,128.84
July 1, 1887, balance available	160,371.16
(*b*) Mouth of Red River:	
July 1, 1886, amount available	4,364.43
August 19, 1886, amount alloted	15,000.00
Total	19,364.43
July 1, 1887, amount expended during the fiscal year, exclusive of outstanding liabilities, July 1, 1886	19,013.60
July 1, 1887, balance available	350.83

CONSTRUCTION AND REPAIR OF LEVEES.

The project of levee building adopted by the Commission has so far been simply to close the existing gaps in the lines already established by constructing levees as far as the funds allotted will permit with locations of reasonable permanence and grades equal to the adjacent levees. While proceeding under this plan the loss of levees by caving banks and their breaching by floods may be annually anticipated.

At the beginning of the fiscal year no work was in progress, owing to lack of funds. The levees built were generally in good condition. Some repairs were known to be necessary to the United States levees at Hard Times, Kempe, and to the Glasscock swamp portion of the Green's to Fairview Levee, all on the Tensas front. On the Atchafalaya Front the line of levees was continuous, except the Morganza Crevasse.

From the appropriation of Congress made in the act approved August 5, 1886, for improving Mississippi River, the Commission at its meeting September 20, 1886, allotted $40,000 to be applied to the building of Morganza Levee, the resolution being as follows:

"That the sum of $40,000 be applied to the building of Morganza Levee, provided the balance of the sum necessary to complete said levee be contributed by the State of Louisiana, and raised from other sources."

A project for the expenditure of this sum was called for, and was prepared and submitted by Major Raymond. This project was, briefly, as follows:

"That the United States district engineer be authorized to enter into an agreement with the contractor for the work to be done by the State of Louisiana and parish of Pointe Coupée. That the work of the United States shall commence when the work of the State and parish has been completed to the satisfaction of the district engineer. Payment shall be made upon the completion of the levee to the satisfaction of the United States district engineer. All work to be paid for by the United States shall be executed under the supervision and in accordance with the instructions of the United States district engineer. The agreement shall be subject to the approval of the Secretary of War."

This project was approved October 15, with the condition that the work done by the State authorities should be subject to inspection by the United States engineer officer in charge of the district.

In accordance with the approved project, an agreement was entered into with the State contractor to build the portion of the levee to be paid for by the United States, at the rate of 25 cents per cubic yard, and an inspector was placed at once upon the work being done by the State.

The construction of the levee was commenced October 13, 1886. Owing to the lateness of the season it was considered somewhat uncertain whether the levee could be completed before the high water of 1887, but, favored by dry weather, the work was pushed with great energy, and on January 29, 1887, the levee was reported completed. A careful final inspection was made, the work found to be satisfactory, and the levee was accepted. Since that time it has been tested by the moderate flood of 1887, and has shown no signs of weakness.

On September 20 and November 27, 1886, the Commission made allotments of funds, to be assigned by the Board of Engineer Officers on building and repair of levees, for the construction, repair, and maintenance of levees in the third and fourth districts.

With funds derived from this source repair work has been done on the United States levees at Hard Times, Kempe, and on the Glasscock Swamp portion of the Green's to Fairview Levee.

For details concerning levees I refer to the report of my assistant, Mr. H. S. Douglas, who has special supervision of levee work.

The gaps now existing in the lines of levees in the district are on the Tensas Front, and are as follows:

Diamond Island Bend, a gap about 50,000 feet long.

Bougere Crevasse, a gap about 23,400 feet long.

Black Hawk to Red River, a gap about 90,000 feet long.

At Deer Park, two short gaps.

A gap is seriously threatened at the United States Kempe Levee, where the bank is caving rapidly, and is now within a short distance of the embankment.

On the Atchafalaya Front the closure of the Morganza Crevasse makes the line of levees continuous from the mouth of Red River to the forts.

The commerce benefited by levees is all that of the Lower Mississippi River.

The work coming under the general appropriation for improving the Mississippi River from Cairo to the Head of the Passes, no separate appropriation is asked for.

FINANCIAL STATEMENT.

Improving Mississippi River (no limit).

(a) Levees on Atchafalaya Front:	
July 1, 1886, amount available	$511.35
October 5, 1886, amount allotted	40,000.00
Total	40,511.35
July 1, 1887, amount expended during the fiscal year, exclusive of outstanding liabilities July 1, 1886	40,511.35
(b) Levees on Tensas Front:	
July 1, 1886, amount available	1,413.72
November 20, 1886, amount allotted	11,100.00
Total	12,513.72
July 1, 1887, amount expended during fiscal year, exclusive of outstanding liabilities July 1, 1886	10,613.66
July 1, 1887, balance available	1,900.06
(c) Protection of levees:	
March 4, 1887, amount allotted	7,000.00
July 1, 1887, amount expended	503.82
July 1, 1887, amount available	6,496.18

SURVEY OF THE MORGANZA REACH.

The survey of the Morganza Reach was called for by a resolution of the Commission of November 26, 1886.

The object of the survey was to obtain preliminary data from which to note the effect of the closure of Morganza Crevasse upon the channel of the river in the vicinity. For this purpose fifteen cross-sections of the reach have been carefully made, permanently marked and referred to the Memphis datum, so that they can be repeated at some future date for comparison.

The survey was only intended to establish data for future comparison, but as the cross-sections were nearly coincident with those made in 1883, under the direction of

the Commission, I have had these sections plotted on the same sheet with those of the present survey, and the following comparative table of areas and hydraulic radii prepared:

Increase and decrease in area and in hydraulic radius, cross-sections of Morganza Reach, Mississippi River.

Cross-section.	Area.			Hydraulic radius.		
	1883.	1887.	Increase +; decrease —.	1883.	1887.	Increase +; decrease —.
			Per cent.			*Per cent.*
1	112,186	113,697	+.013	43.5	44.3	+.018
2	114,583	121,299	+.063	37.6	37.7	+.003
3	118,958	99,906	—.160	67.7	48.6	—.282
4	110,312	106,841	—.031	64.8	58.4	—.098
5	129,750	109,702	—.154	55.0	49.2	—.105
6	108,599	97,277	—.104	42.4	40.8	—.037
7	104,633	103,529	—.010	29.5	33.6	+.122
8	110.970	93,093	—.161	37.2	33.1	—.110
9	92,183	89,658	—.027	37.4	41.0	+.067
10	109,869	80,193	—.270	50.6	40.1	—.207
11	96,967	81,169	—.162	47.7	40.4	—.153
12	127,352	109,733	—.138	58.1	48.5	—.166
13	131,315	115,445	—.120	47.4	40.0	—.156
14	121,404	89,819	—.260	35.7	24.2	—.322
15	102,130	85,737	—.160	42.3	34.9	—.174

The Morganza Crevasse has been open for thirteen years, nine of which were prior to the survey of 1883. It would seem that during this time the channel of the river, at least so far as it was affected by the crevasse, would have attained a state of equilibrium, but the table does not indicate that it had. Of the fifteen cross-sections, Nos. 1, 2, 3, 4, 5, 6, and 7 were above the main crevasse channel, and Nos. 8, 9, 10, 11, 12, 13, 14, and 15 below.

On the sections from 1 to 7, above the crevasse, there is an average decrease in area of 6,454 square feet, and an average decrease in hydraulic radius of .039 per cent. On the sections from 8 to 15, below the crevasse, the average decrease in area is 18,417 square feet, and the average decrease in hydraulic radius is .150 per cent. The decrease is nearly four times greater below the crevasse than above.

The table covers a period of forty-seven months, from February, 1883, to January, 1887, during which time four floods had passed.

The necessary preliminary data being now at hand, it is hoped that the effect of this crevasse on the river channel will soon be definitely and positively established.

The report of Assistant Engineer H. S. Douglas on the survey is appended.

FINANCIAL STATEMENT.

Survey of Mississippi River.

Survey of the Morganza Reach:

December 15, 1886, allotment	$600
July 1, 1887, amount expended during fiscal year	600

IMPROVEMENT OF THE MISSISSIPPI RIVER AT NATCHEZ AND VIDALIA, MISSISSIPPI AND LOUISIANA.

No work has been done in this vicinity, owing to the lack of funds.

The approved project contemplates the protection of the caving banks by means of submerged sloping-spurs placed at intervals to be determined as the work progresses, but assumed for estimate of cost at 1,000 feet. The estimated cost is $600,000.

To prevent the flow of water across the neck of land between Giles and Cowpen bends, and the anticipated destruction of the harbors of Natchez and Vidalia by a cut-off, it is proposed to construct a levee at an estimated cost of $100,000. This makes the total estimates $700,000.

The amount which can be profitably expended during the fiscal year ending June 30, 1889, is $250,000, for the purchase of the necessary plant, the construction of the levee, and the commencement of dike work.

COMMERCIAL STATISTICS.

Exact information is not obtainable, but it is estimated that there is received annually at Natchez, Miss., about 40,000 tons of provisions, groceries, machinery, 7,000 tons cotton seed, and 25,000 tons coal. The shipments are about 40,000 bales of cotton and 4,000 tons oil products. About 1,200 steamers arrive and depart.

At Vidalia, La., the receipts were about 8,000 tons produce, provisions, and machinery, and the shipments about 10,000 bales cotton and 2,000 tons cotton seed, but a railroad recently completed to Trinity, La., has added materially to the commerce of Vidalia.

The work is in the collection district of New Orleans, which is the nearest port of entry.

FINANCIAL STATEMENT.

July 1, 1886, amount available	$1,000.65
July 1, 1887, amount expended during the fiscal year ending June 30, 1887, exclusive of outstanding liabilities July 1, 1886	175.00
July 1, 1887, amount available	825.65

Approximate value of plant belonging to the United States and used upon the improvement of Mississippi River, fourth district.

Class of property.	Approximate value July 1, 1887.	Class of property.	Approximate value July 1, 1887.
Steamer *General Newton*	$13,000	1 floating storehouse	$1,400
Steam tug *John Orm No. 2*	6,600	Tools and appliances	3,600
Steam-tug *Tilda*	5,000	Office furniture	700
Steam-launch *Ruby*	3,000	Surveying instruments	1,500
Steam-launch *Alaska*	3,000	Miscellaneous	1,800
2 quarter-boats	3,000		
26 barges	51,550	Total	94,150

List of civilian engineers employed on works of river and harbor improvement in charge of Capt. Dan C. Kingman, Corps of Engineers, to June 30, 1887, inclusive, under the river and harbor appropriation act approved August 5, 1886.

Name and place of residence.	Months employed.	Compensation per month.	Where employed.	Work on which employed.
H. S. Douglas, New Orleans	1½	$140	New Orleans	New Orleans Harbor, levees, mouth of Red River.
Do	10½	175	do	Levees.
W. G. Price, New Orleans	10½	155	do	Mouth of Red River and New Orleans Harbor.

DAN C. KINGMAN,
Captain of Engineers.

F 1.

REPORT OF ASSISTANT ENGINEER PRICE ON WORK IN NEW ORLEANS HARBOR.

UNITED STATES ENGINEER OFFICE,
New Orleans, La., April 7, 1887.

SIR: I have the honor to submit the following report on the work of improving the harbor at New Orleans, La.:

On October 6, 1886, the work of repairing the plant was begun. As no work had been done since December 1, 1884, the necessary repairs were quite extensive.

The work of constructing submerged Spur No. 1 at Gouldsboro was commenced on November 29, and the spur was completed on January 6, 1887. Construction of Spur No. 6 was begun the next day, and it was finished on February 3.

It was intended to finish Spur No. 5, which was partially constructed in 1884, and three cribs had been built for that purpose. The plant was placed in position at that spur on February 7, but owing to the great quantity of heavy drift running, it was found to be impracticable to sink the cribs at that place. A portion of the plant was then moved up in front of the Texas and Pacific Railroad incline, and the three cribs remaining on hand were sunk so as to carpet the bank in front of the incline from a low-water depth of 35 feet down to a depth of 75 feet. The up-stream ends of the cribs lapped on the down-stream edge of the mattress in Spur No. 3, and they extend 140 feet down-stream. Work was then suspended.

The work was delayed very much by the slow delivery of willow brush, and the cost of the spurs was thereby considerably increased. The method of constructing and sinking the mattress and cribs was the same as in 1884, except that the cribs were built and launched from ways on a float, instead of on ways on the bank. The float had just enough buoyancy to support the crib timbers and the first layer of willow brush. This method was found to be cheaper and better than the old one.

Owing to the swift current during the work on Spur No. 6, I was obliged to devise a new method for locating the exact position of each crib as it was lowered, so as to make them rest in their correct positions when sunk. Three or four No. 12 wires were attached along the center line of the crib to be sunk, and as the crib was lowered each one in succession was hauled taut by a small capstan in a skiff, with a pull of 500 pounds. With a transit on shore I could determine when the wire was vertical, and thus locate the position of the crib with reference to the center line of the spur.

The average cost of the spurs built this season, exclusive of cost of plant, was $10,460, but this includes rock at a cost of $4.11 per cubic yard. We have used less than half as much rock for a spur as was used in 1884. I think all the cribs, except the top one in a spur, could be ballasted safely with clay in sacks, and this would greatly reduce the cost of the work.

A survey of the Gouldsboro bend was made during the month of October, 1886, and this survey compared with those of 1884 and 1885 shows that there has been very little change in the spurs, or in the bank and bed of the river between them. They are apparently holding the bank in the same position as when they were put down, except that there has been a cave a short distance above Spur No. 5. But Spur No. 4 has not been built, and Spur No. 5 is only partly completed, and as the bank at this point was very steep a cave was to be expected.

The velocity of the water at high stage of the river is much less along shore than it was before the spurs were built.

Very respectfully, your obedient servant,

W. G. PRICE,
Assistant Engineer.

Capt. DAN C. KINGMAN,
Corps of Engineers.

F 2.

REPORT OF ASSISTANT ENGINEER DOUGLAS ON WORK AT THE MOUTH OF RED RIVER.

UNITED STATES ENGINEER OFFICE,
New Orleans, La., June 30, 1887.

CAPTAIN: I have the honor to submit the following report on the work of maintaining a low-water channel between the Mississippi and Red and Atchafalaya rivers during the fall of 1886:

At the end of the fiscal year, June 30, 1886, no funds were available for this work, except sufficient to care for property. The importance of commencing before the river had reached too low a stage was well known. The headquarters of the office having been temporarily transferred to New York City during the sickly season in New Orleans, I was directed by Maj. C. W. Raymond, the officer then in charge, to keep him informed from the best information attainable of the condition of Old River.

On August 1 I reported "8 feet on the bar at the mouth, 7 feet near Ash Cabin, 4½ feet on the crossing, and thence to the Atchafalaya, 18 feet; that the river was falling at the rate of 6 inches per day; that it was reported that there had been a general filling up of the deep holes existing in previous years between the mouth and Ash Cabin, and that this was likely to add considerably to the difficulty of maintaining navigation by the scraping process, as there would be no way of disposing of the material that might be scraped off the shoals."

On August 6 I was directed to hold myself in readiness for commencing work in Old River, and on the 9th I was ordered to begin operations as soon as possible.

The stern-wheel steamer *General Newton* was in very bad condition, having been very much strained by the work of previous years, and no money had been available for her repair. It was thought that it would be hardly safe to take her out. However, a suitable boat could not be chartered in New Orleans, and time did not permit of going elsewhere. Accordingly the *Newton* was hastily and temporarily strengthened and repaired where she was conspicuously weak.

Preparations were pushed as rapidly as possible, and on August 12 the *Newton*, with coal barge in tow, left for the mouth of Red River, where she arrived on the morning of the 14th.

Owing to the lateness of the season and the low stage of the river, it was thought that the chance of successful work was rather more than dubious. A careful examination of Old River was made on the 14th, and although a least depth of 30 inches was found it was thought that there was a chance of maintaining navigation.

The *Newton* proceeded at once to the Government landing above Natchez, Miss., took on board the scraper which had been left there, and with the two quarter-boats and the steam-launch *Ruby* in tow, returned to the mouth of Red River on the morning of August 16. The derrick for raising and lowering the scraper, which hung from the bow of the boat, was rigged up as soon as possible, and on August 17 the work of scraping on the bar at the mouth was commenced. On that day there was a channel with a depth of 3½ feet over the bar. On the 20th the depth had been increased to 5½ feet by the scraping process.

Scraping on the bar was continued until the 27th, when it was ascertained that all the mud had been removed and only sand remained. On this the scraper made but little impression, and scraping was discontinued. The *Newton* was then anchored on the bar and an attempt made to wash out the sand with her wheel. This was partially successful, but as the boat could only be secured in one position and the bar was 600 feet across, some other means had to be devised to carry the washing process clear across the bar. Accordingly clusters of piles, about 50 feet apart, were driven in a row along the edge of the proposed channel, from deep water in the Mississippi River to comparatively deep water in Old River.

The steamer *Osceola* arrived on September 13, to relieve the *Newton*, and the scraper and attachments were transferred to her. On September 17 the clusters of piles had all been driven across the bar, and it was determined to give the washing-out process a thorough trial. Authority for the repair of the *Newton* had not yet been received, so she was retained on the work. On the morning of the 17th the two boats were placed in position on the outer edge of the bar. Their position and method of operations were as follows: The *Osceola* laid in next the cluster piling, to which she was firmly lashed, her bow pointing out into the Mississippi and her wheel being just on the edge of the bar. The *Newton* laid alongside the *Osceola*, to which she was securely fastened, so that her wheel was immediately opposite to and on line with the *Osceola's*. The current was setting from the Mississippi into Old River and the wheels of both boats were started with the current, which was accelerated to such an extent that all the sand for about 50 feet astern was washed away. When this had been done, the two boats, still lashed together, were dropped back about 50 feet along the piling and the wheels again started. This was continued until the boats had worked entirely across the bar and into deep water inside. On the morning of the 17th soundings on the bar gave a channel with a depth of only 3½ feet. On the evening of the 17th, after the boats had washed the channel across the bar, soundings showed a channel with a least depth of 6 feet, and there were numerous holes with a depth of 10 feet. The two boats continued to work successfully in this manner until September 23, when the *Newton* returned to New Orleans for repairs. The *Osceola* continued the washing process, occasionally using the scraper where clay stratas were developed, until the sliding banks closed navigation in the "Gut" and there was no object in keeping water on the bar. The channel washed by one boat is, of course, not so wide, nor is it so deep as when two boats are used.

On August 20, shortly after scraping on the bar was commenced, three small barges and a pile-driver, kindly loaned by Captain Rossell, from the third district, arrived at the mouth of Red River.

On August 22 a force of laborers was organized, and they commenced cutting brush and piles for dike construction. The location of the first dike in the "Gut" near section R, having been determined on, the pile-driver commenced driving piles on the 24th, and the first dike was completed on the 28th. In the meanwhile the river continuing to fall, a dry sand-bar made its appearance at the mouth, making two channels at that place. It was noticed that a portion of the Mississippi water entering Old River at the upper channel returned through the lower channel. As it was absolutely necessary to the success of the dike work to have all the water possible pass through Old River to the Atchafalaya it was decided to close the lower or return channel. A dike or dam about 350 feet long was built from the main shore below the mouth out to the dry bar, entirely closing this channel. The construction of other dikes in Old River was then undertaken, and at all wide places clear through to the

Atchafalaya dikes were built to concentrate the current and deepen the channel Wherever the bottom was composed of sand or soft mud the effect of the dikes was to cut out the channel very rapidly, opposite and for some distance below. Where the bottom was composed of hard clay the dikes had but little effect.

All the dikes and the dam were built in the following manner: First, two rows of light piles were driven on the line of the proposed dike. The piles were spaced about 3 feet apart. The space between the rows was about 3 feet, and this space was filled in with willow brush, the first courses being laid diagonally, with the bushy tops outside the piles to prevent undercutting. After the space between the two rows of piles had been filled up above the water-surface, bags filled with sand were placed on top to weight the brush down and retain it in position. Such dikes are only temporary, but they serve the purpose for which they are built very effectually during low-water season.

On August 29 the first sliding or sloughing of the banks took place between the "Dead Tree" and the "Crossing." No injury to the channel from this cause was, however, observed until September 22, when lumps and ridges commenced to develop between Dikes 4 and 6, near Ash Cabin. From this time on mud lumps and ridges continued to rise in the channel with great rapidity. Frequently in a few hours the channel would be entirely changed or totally obstructed from this cause. To add to the difficulties, the current, which since the commencement of work had been running strongly from the Mississippi toward the Atchafalaya, became slack, caused by a rise from Red River. On October 20 an attempt was made to blow up the mud ridges near Ash Cabin with Hercules powder. The trial was made on a ridge which extended clear across the channel. It was about 5 feet wide and there was only about 1 foot of water on the crest. Some of the powder was placed in a hole about 5 feet deep, and some was laid on top of the ridge and covered with a sack of clay. The latter method was found to give the best results. The effect of the explosion was to flatten out the ridge up and down stream. It broke up the material and made it much softer, so that a good current would have washed it away. A depth of 3 feet over the ridge was obtained by this means, but the clay continued to squeeze up from the bottom, so that in the end we had a ridge 50 feet wide instead of 5 feet. Had there been a swift current to remove the material loosened by the blast, the results might have been better.

Mud springs developed, from which an apparently inexhaustible supply of mud and sand continually rose. The mud lumps and ridges continued to come up with increasing rapidity, and notwithstanding every effort the channel closed to navigation on October 28. From October 21 to 31 the river fell 2.2 feet, reading on the latter date 2.7 on the Red River Landing gauge.

There being no prospect of further successful work until the river rose, the plant was laid up and the force discharged.

On November 21 a rise from Red River and tributaries caused a strong current into the Mississippi and gave sufficient water for navigation. The material scoured out of Old River by the current caused the bar at the mouth to shoal, and the *Osceola* recommenced washing and scraping on the 24th. The *Newton* having been repaired, returned to the mouth of Red River on November 27, and relieved the *Osceola*. Both the Mississippi and Red rivers continued to rise, rendering further work unnecessary. All piles that might prove high-water obstructions were pulled, and the steamer *Osceola*, the pile-driver, and the three barges were returned to the third district on December 9, 1886. This closed the season's work.

As to the results accomplished, the following statement will give an idea: On August 16, prior to the commencement of work, when the Red River Landing gauge read 11.6 and the Barbre's gauge 8.3, there was a navigable channel through Old River with a least depth of 30 inches. This depth and better was maintained until October 26. On that date the Red River Landing gauge read 3.7, a fall of 7.9, and the Barbre's gauge 3.7, a fall of 5.6. In other words, the bottom of Old River, at numerous points, would have been dry, and from 3 to 5½ feet above the water-surface, but for the work done by the United States. It is reasonably certain that navigation was maintained for at least two months, when otherwise Old River would have been entirely closed.

The following is a summary of the work done:

Number of mooring piles driven	37
Number of piles driven in dikes	1,383
Number of cords brush placed in dikes	424
Number of sand-bags filled and placed on dikes	6,474
Total length of dikes built ... feet	2,609
Approximate amount of material removed from the channel of Old River, cubic yards	284,000

I have been acquainted with the low-water channel of Old River since 1879, and almost every year have seen the work of maintaining navigation assume some new phase. What was then a succession of deep pools and shoals, bordered by extensive

mud-flats, has assumed a great many of the characteristics of a high-water outlet bayou. The mud-flats have become defined banks, with a growth of willows on them. The pools have filled up, and the cross-section has become regular and almost semicircular between the defined banks. Instead of two or three low-water shoals, the bar at the mouth, the "Gut," and the "Crossing," there is now a continuous shoal from the Mississippi to the head of the Atchafalaya. The nearly total closure of the Tensas Front by levees, thus preventing the escape at high water of the Mississippi into the Tensas Basin, has apparently checked the enlargement of the Atchafalaya, but the problem, so far as the commercial interests are concerned, of maintaining low-water navigation between the Mississippi and Red and Atchafalaya is still unsolved.

So far as the present temporary methods are concerned, by beginning the work of scraping out the mud at Ash Cabin about the time the river fell to a 20-foot stage on the Red River Landing gauge, there would be a much greater probability of the channel being kept open.

Mr. W. G. Price, assistant engineer, was associated with me upon the work, and rendered the most efficient assistance, both in originating and carrying out the various methods by which it was hoped to maintain navigation.

Very respectfully, your obedient servant,

H. S. DOUGLAS,
Assistant Engineer.

Capt. DAN. C. KINGMAN,
Corps of Engineers.

F 3.

REPORT OF SURVEYOR HARDEE ON THE SURVEY OF THE ATCHAFALAYA RIVER.

NEW ORLEANS, *La.*, *March* 1, 1887.

SIR: I have the honor to submit the following report of the Atchafalaya River survey and the method pursued.

The portion of the river embraced in the survey lies immediately in front of the town of Simmsport, La., and extends from the mouth of Bayou des Glaizes to a point down-stream about 9,000 feet.

As a basis, a carefully chained traverse line was run between the above points on both banks of the river, the stations on which are permanently designated by iron tubes 2 inches in diameter and driven to a depth of from 2½ to 3 feet in the ground, extending above about 1½ feet.

Cross-sections of the river were made at right angles to the line of current at intervals of not more than 100 feet, with the initial points of same resting on the west bank traverse. All sections were extended from levee to levee, and on every fifth section the lines were produced 500 feet back of both levees to show the slope of ground surface. By means of the level the bank elevations were acquired. Soundings were made on sections not more than 30 feet apart and located with one transit stationed at the end of a base line, thrown at right angles to the line of cross-section. Distances to soundings measured by scale of natural tangents. All soundings are reduced to the zero of Barbre's Landing gauge. Elevations referred to the same plane.

On the completion of the cross-sections the entire area of the river embraced in the survey was sounded by means of float soundings. Soundings were located by the intersection of two transits positioned at traverse stations.

In all about 13,000 soundings were taken, many of which by reason of their too close proximity were rejected, but as will be shown by the chart sufficient depths were acquired to show a good, clear profile of the bottom and designate any existing irregularities.

All topography within a distance of about 700 feet of the river bank was measured with transit and stadia, and also enough of Bayou des Glaizes to define its position and entrance into the Atchafalaya.

The notes of the above survey have been compiled and remain on file in this office.

Very respectfully,

W. J. HARDEE,
Surveyor.

Capt. DAN C. KINGMAN,
Corps of Engineers, U. S. Army, New Orleans, La.

F 4.

REPORT OF ASSISTANT ENGINEER DOUGLAS ON CONSTRUCTION AND REPAIR OF LEVEES.

UNITED STATES ENGINEER OFFICE,
New Orleans, La., June 30, 1887.

SIR: I have the honor to submit the following report on the construction and repair of levees, fourth district, for the fiscal year ending June 30, 1887.

At date of last annual report, June 30, 1886, no work was in progress owing to lack of funds. The levees previously built were generally in good condition. It was known that some repair work was necessary to the United States levees at Hard Times, Kempe, and from Green's to Fairview. The gaps existing in the lines of levees were as follows: On the Tensas Front, Diamond Island Bend, Bougere Crevasse, and Black Hawk to Red River. On the Atchafalaya Front, Morganza Crevasse.

The Morganza Crevasse, which the present levee closes, is located on the right bank of the river in the Morganza Bend, about 10 miles above the town of Bayou Sara. During the flood of 1874 the Morganza Levee was swept away, and for 10 years the crevasse remained open, permitting the escape of an enormous volume of water from the river during floods, and overflowing a large area of country. In 1883-'84 the levee was rebuilt at the expense of the State, but it had scarcely been completed when it was again swept away by the flood of 1884.

This disaster gave rise to a popular impression that it was almost impossible to build a line of levee at this point that would stand. Some special difficulties undoubtedly did exist, as the line for a levee necessarily crosses over ridges and irregular hillocks of loose material deposited by the river during floods, and was thus liable to pass over buried masses of drift logs or brush.

In order to avoid these sources of danger to the present levee extraordinary precautions were taken. Work was commenced October 13, 1886, and was prosecuted in the following manner: After the surface had been thoroughly cleared, a muck ditch of varying width and depth was dug. This ditch was excavated clear through all material deposited since 1874, down to the original buckshot soil, which was at one time cultivated land. In some cases this ditch had a depth of 16 feet. If in the course of the excavation logs or rack heaps were discovered, they were dug out and removed beyond the base of the levee and the ditch filled in with clay. As an additional precaution, long iron rods were used to probe the ground and detect the presence of logs or rack heaps. After the foregoing had been done the embankment was commenced.

The dimensions of the embankment were as follows: Width of crown, 10 feet; side slopes, 3 to 1, and at some special places 4 to 1. The levee was strengthened with a banquette or terrace 20 feet wide on the land side wherever the levee was more than 8 feet high. This gives a base of 150 feet for a height of 20 feet. The extreme net fill was 24 feet. The total length of the present Morganza Levee is 9,250 feet; its grade is about 2 feet above the flood of 1882, and it contains 270,523 cubic yards of earth.

The weather during the progress of the work was exceptionally good, but three days being lost from rain, and embankment construction was pushed with great energy, as indeed was necessary, owing to the lateness of the season when work was commenced.

On January 29, 1887, the levee having been reported completed, a careful inspection was made under your personal direction, and the levee was found to be satisfactory and was accepted.

The State authorities retained a small force upon the levee during the past high-water season, as a measure of precaution and to repair wave-wash or other injury to the embankment. It is, however, gratifying to state that notwithstanding the new and unsettled condition of the levee it has shown no signs of weakness.

The repair work at Hard Times, Kempe, and Glasscock levees was of such a character that it was impracticable to measure it and pay by the cubic yard for work done, so bids for furnishing laborers with the necessary equipment were asked and very reasonable terms secured.

At Hard Times Levee the old sinking place at the crossing of Lake St. Joseph had again sunk slightly, and at several points where the line of the levee crosses sloughs it had cracked and slid or sloughed off on the sides. A growth of young trees had started on the slopes, and at some places the embankment was deeply gullied by rain-wash.

A force was put to work on December 27, 1886, to repair the sloughing and sinking places, clear off the levee, and fill the gullies. The work was completed April 7, except at one point where the embankment continues to crack and slide off on the sides as fast as fresh earth is put on top. Some additional work may be necessary at this point before next high water.

At Kempe Levee the crossing of Potter's Lake had again cracked and sunk. A force was put to work December 27, 1886, to build up the embankment. This work was

completed February 14, 1887. Kempe Levee is now seriously threatened by the rapid caving of the river bank in front, and it is thought that the embankment will be breached from this cause before the flood of 1888. A break at this point will be very serious and permit of the escape of an enormous volume of water from the river.

Glasscock Levee is that portion of the United States Green's to Fairview levee passing through the Glasscock Swamp. During the high water of 1886 the levee was reported to be in a dangerous condition, and a break was only prevented by the exertions of parties living in the neighborhood. This weakness, being unexpected and apparently unaccountable, gave rise to rumors of defective construction; that logs, barrels, etc., had been placed in the embankment. Upon the decline of the flood the true cause was discovered. The borrow pits dug in the construction of the levee, being in buck-shot soil, which is non-absorbent, remained filled with water the year round, and in these pits a colony of beavers had located. They had made their dens or houses in the levee embankment itself, and had tunneled almost through at several points. An inspection was made and one place discovered (the point at which a break had been threatened) where the beavers had made a hole entirely through the embankment. The levee being thickly overgrown with young trees, briars, and weeds, it was impossible to detect all the damage that had been done.

A force was put to work December 21, 1886, and the first work undertaken was to clear the levee of trees, briars, etc., and in doing so six separate places were discovered where the embankment had been burrowed into by the beavers. A ditch about 2,000 feet long was then dug to drain the borrow pits into the river and deprive the beavers of their harbor. This ditch was twice closed by the beavers, but ultimately the greater portion of the water was drained off. The work of cutting out the beaver holes in the levee was then commenced. The main passage-way to the den generally started at the outer edge of the levee berme, in the borrow pits, and concealed by the water. This passage-way would have several branches leading into the den in the center of the levee. The den was generally located under the land slope, and was from three to four stories in height, the first being about on a level with the natural surface of the ground, and the uppermost one nearly up to the crown of the levee. The injury to the levee could hardly have been greater, as it was reduced to a mere shell and was liable to a collapse at any time. In repairing the damage it was found necessary to virtually rebuild the levee at several points for a length of from 25 to 30 feet. Eight beavers were killed by the workmen during the time they were engaged on the repairs. On March 3, 1887, the levee having been placed in a safe condition, work was suspended on account of high water. As soon as the river falls it will be necessary to deepen the ditch already dug and dig another at a point further up the river.

So far as can be learned, this is the first instance in this district where levee embankments have been injured by beavers. Had a crevasse occurred at this locality, it would very likely have been attributed to faulty construction of the levee or to the boring of crawfish, and not to the true cause, the beavers.

One portion of the United States Green's to Fairview levee passes through the Deer Park Plantation. At this point the river bank is caving very rapidly, and provision for a new levee has been made by the Commission.

The levees generally throughout the district are in good condition. They have not been placed under any severe strain during the past season, as the flood of 1887 was a very moderate one.

The line of levees is now continuous on the Tensas Front from the head of the district to Bougere's Landing, in Concordia Parish, with the exception of the Diamond Island Bend Gap. Between Bougere's Landing and the mouth of Red or Old River there are only isolated pieces of levee on the high ground, the principal gaps being Bougere's Crevasse and from Black Hawk Landing to Red River.

On the Atchafalaya Front the levees are now continuous from Red River to the forts.

Very respectfully, your obedient servant,

H. S. DOUGLAS,
Assistant Engineer.

Capt. DAN C. KINGMAN,
Corps of Engineers.

F 5.

REPORT OF ASSISTANT ENGINEER DOUGLAS ON SURVEY OF MORGANZA REACH.

UNITED STATES ENGINEER OFFICE,
New Orleans, La., June 1, 1887.

SIR: I have the honor to submit the following report on the survey of the Morganza Reach, Mississippi River:

The survey was made in accordance with a resolution of the Commission passed at their meeting November 26, 1886, that a set of cross-sections, not exceeding 15 in

number, and extending 3 or 4 miles above and below Morganza, be taken on lines well marked for future reference.

The party engaged in making the survey for the proposed sill-dams in the Atchafalaya was temporarily transferred to the Morganza Reach. Mr. W. J. Hardee was in immediate charge of this party, which was thoroughly organized and equipped, and he is entitled to great credit, no time being lost, and the work being done both accurately and quickly.

The field work of the survey was commenced January 12, 1887, under my personal direction, and was completed January 25, 1887. The actual working time, exclusive of time lost from bad weather, was eleven and one-quarter days, during which time the following was accomplished:

Length of traverse line run, 20.23 miles; length of line chained, comprising measurements to establish initial points of sections, bank distances on sections, and base-lines for locating soundings, 11.16 miles; length of level lines run to establish datum at the different sections, and to prolong sections from water's edge on either bank, 16.8 miles; number of soundings taken and located with two instruments on cross-sections, 748.

The method of operations was as follows: On arrival in the reach a general reconnoissance was made and the location of the fifteen cross-sections decided on. In locating the sections an endeavor was made to have them cross the river on lines previously sounded by the Commission in the general survey of this portion of the river, made in February, 1883.

A line of levels was run on the right bank the full length of the reach, and bench-marks established at each section. All levels were referred to the Memphis datum. Two and sometimes three iron tubes were driven and located on the line of each section to permanently mark its position and direction. Base-lines for locating soundings were measured at each section. Considerable clearing was necessary to open vistas for the level lines on the sections. A transit and stadia traverse line was run on the right bank the full length of the reach, to connect the sections and locate the shore-line and levees. This was all incidental work to the actual sounding of the cross-sections, and the most of it was done at times when the wind was too strong for accurate sounding.

In sounding the cross-sections the following method was observed: The line of the section was ranged off on either bank with flags, as a guide for the soundings. Two transits were then set up, one on either end of the base-line previously measured. One end of the base was always on the section line. Levels were then taken from the bench-mark previously established, on a measured line from the zero point of the section to the water's edge, and the elevation of the water-surface determined. The lead line was then tested and soundings commenced. To secure plumb soundings in the swift current, the launch was run above the section line, the lead thrown, and the launch and lead allowed to drift together down on to the ranged line, at the moment of crossing which the sounding was taken. Commencing at the right bank the launch was gradually worked across the river, taking about twenty-five soundings, each of which was located, regardless of the ranged line, by two transits. When the left bank was reached a flag was set up at the water's edge and located. The section was then prolonged, by means of measurement and levels, from the flag up to the high-water bank. The launch then commenced the return trip to the right bank, taking about twenty-five more soundings, thus duplicating the section and checking any error of the leadsman. Upon the completion of the section the lead line was again tested, and the party transferred to the next section, where the same routine was followed. About fifty soundings were taken on each section, and in plotting the work but few errors were discovered.

I do not think any difficulty will be experienced in repeating the sections, as the iron tubes marking them are not likely to be destroyed.

The field work of the survey has been plotted, and accompanying this report is a tracing of the chart of Morganza Reach, showing locations of cross-sections and permanent marks; also comparative cross-sections from surveys of February, 1883, and January, 1887.

Very respectfully, your obedient servant,

H. S. DOUGLAS,
Assistant Engineer.

Capt. DAN. C. KINGMAN,
Corps of Engineers.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 60.

PROTECTION OF SUBMARINE CABLES.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A report from the Secretary of State relating to legislation required to carry into effect the protection of submarine cables.

JANUARY 9, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a report from the Secretary of State relative to the legislation required to carry into effect the international convention of March 14, 1884, for the protection of submarine cables, to which this country is a party.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, January 9, 1888.

The PRESIDENT:

Under Article XII of the international convention of March 14, 1884, for the protection of submarine cables, to which the United States is a party, it is made the duty of the signatory powers, respectively, to enact laws for the punishment of such persons as may violate the provisions of Articles II, V, and VI, of said convention.

In order that opportunity might be afforded for the adoption of such legislation, the 15th day of January 1886, was specified in the treaty as originally signed and proclaimed as the date upon which it should go into operation. Owing, however, to the failure of a few of the contracting parties, principal among which was the United States, to enact appropriate laws, the execution of the convention has, from time to time, been postponed. At a conference held at Paris on the 7th day of July last it appeared that legislation had been adopted by all the signatories except the United States and four other powers, and a protocol was signed *ad referendum* in which, in order to give the governments still further opportunity to legislate, the 1st day of May, 1888, was determined upon as the date on which the treaty should go into effect.

A draught of a bill which it is thought would meet all the requirements of the convention is herewith submitted. This is the same bill which was pending in the last Congress, except that section 8, which provided for the restriction of the operation of the convention to certain fathomable depths, has been omitted from the draught as being in conflict with Article IV of the convention.

It is proper to state that a similar restriction was embodied in the original act passed by the British Government to carry the treaty into effect, but has since been stricken from the law and abandoned as contrary to the provisions of the convention.

The accompanying papers relating to the subject are transmitted for the further information of Congress.

Respectfully submitted.

T. F. BAYARD.

DEPARTMENT OF STATE,
Washington, January 6, 1888.

No. 1.

Mr. McLane to Mr. Bayard.

No. 305.] LEGATION OF THE UNITED STATES,
Paris, November 5, 1886. (Received November 17.)

SIR: Referring to my dispatch No. 220, of May 20, 1886, and that of Mr. Vignaud, No. 225, of May 27, 1886, I have the honor to call your attention to the fact that I have not received your approval of the protocol therein inclosed, with the necessary authority to communicate such approval to the conference, which adjourned in May last to meet again on the 1st of December next.

I inclose herewith a copy and translation of a communication from M. de Freycinet containing a list of the powers that have signified their approval of the protocol and requesting me to be prepared on the 1st of December to make known to the conference the views of my Government. This protocol, as I advised you in my No. 220, was satisfactory to the two American companies, but time so presses that I have to request you to communicate by telegraph authority to approve it when the conference meets the 1st of December.

I call your special attention to so much of M. de Freycinet's communication as refers to the legislation necessary to give effect to the penal clauses of the convention of the 14th of March, 1884, and I beg to be informed as to the legislation of the United States in this connection. I am not myself aware that Congress has passed any law to give effect to the convention.

I have, etc., ROBERT M. MCLANE.

[Inclosure in No. 305.—Translation.]

M. de Freycinet's communication to Mr. McLane.

PARIS, *November* 4, 1886.

SIR: As you know, the delegates of the different powers having signed the convention of the 14th March, 1884, for the protection of submarine cables, met at Paris the 12th of last May and adjourned until the 1st of December, after having drawn up in a protocol a draft of an interpreting memorandum, which they engaged themselves to recommend for adoption to their respective Governments.

The Government of this Republic instructed, during the month of June, its representatives to communicate officially to the different contracting states the text of this

memorandum, and to make it known that it was much interested in having this signed with as little delay as possible.

Of the twenty-five contracting powers fifteen, the list of whom you will find annexed, have already given their adhesion to the construing memorandum.

I should be much pleased if the American Government would intimate if it accepts it also, and would be kind enough at the same time to authorize you to sign it. This formality should be fulfilled before the 1st December. It is on this date, in fact, that the conference will recommence its sessions in order to finish on the one hand the examination of the laws of which article 12 of the convention of the 14th of March, 1884, prescribes the promulgation; and, on the other hand, to agree upon a decision in regard to the contracting parties who shall not be able to show the adoption of the measures aimed at by this article 12.

In regard to this matter, the fact must not be lost sight of that the penal clauses of the convention of 14th of March, 1884, can not suffice to insure to the prevention of the violations of the convention which it foresees, the convention not specifying the penalty to be inflicted. It is then necessary, in order that the convention may be carried out in regard to this point, that the legislation of each contracting state should each contain express provisions for repressing any violation of articles 2, 5, and 6, and it is important that the Governments which had not at the time of the last conference adopted such provisions should communicate the text of them as soon as possible to the Government of the Republic, to be transmitted to the delegates of the different countries on the renewal of their deliberations; that is to say, on the 1st of December next.

I would be obliged if you would call the attention of your Government to this point, which will be kind enough, I hope, to furnish you with precise instructions, with the view of permitting the next conference to pronounce itself on the situation of the states having signed who might not be able to put the convention into operation the 1st January, 1887.

Accept, etc.,

C. DE FREYCINET.

List of the powers which have ratified the convention for the protection of submarine cables and who have already accepted the interpreting memorandum, the terms of which were agreed upon by their delegates the 21st of May, 1886: Belgium, Denmark, France, Great Britain, Guatemala, Greece, Italy, the Netherlands, Portugal, Roumania, Russia, Salvador, Servia, Sweden and Norway, Uruguay.

Protocol inclosed in Mr. Vignaud's No. 225 May 27, 1886.

The undersigned, delegates of the Argentine Republic, Austria-Hungary, Belgium, Brazil, Costa Rica, Denmark, the Dominican Republic, Spain, the United States of America, France, Great Britain, Greece, Guatemala, Italy, Japan, the Netherlands, Portugal, Roumania, Russia, Salvador, Servia, Sweden and Norway, Turkey, and Uruguay, have met together at Paris on the 12th of May, 1886, for the purpose of examining the situation of the different states signers of the convention of the 14th of March, 1884, for the protection of submarine cables, in respect to the execution of article 12 of the said convention.

As a result of the examination to which they have applied themselves in concert, they have decided upon the draft of declaration which is annexed to the present protocol and which they engage themselves to recommend for adoption to their respective Governments.

Done at Paris May 21, 1886.

Argentine Confederation: JOSÉ C. PAZ.
Austria-Hungary: GOLUCHOWSKI.
Belgium: LEOPOLD OZBAN.
Brazil: ARIMOS.
Costa Rica: FERNANDEZ.
Denmark: MOLTKELMITFELDT.
Dominican Republic: EMANUEL DE ALMEDA.
Spain: JE. LUIS ALBAREDA, VICONTE COROMNIA, ZARTO THOS ACAUA.
United States: ROBERT M. MCLANE.
France: GRANET, CLAVERY, FRIBOURG, L. RENAULT, CHASSERIAN, T. RAYNAUD.
Great Britain: M. KENNED, C. C. TREVOR, T. C. LAMB.
Greece: N. DELYANNI.
Guatemala: C. GOGUEL.
Italy: F. SALVATORI, G. SOLANO.
Japan: F. MARSHALL.
The Netherlands: ADE STUERS.
Portugal: ANDRADE CORVO, BRISSAC.
Roumania: V. ALECSANDRI.
Russia: E. ALEXEIEFF.
Salvador: PECTOR.
Servia: T. MARNIOVITCH.
Sweden and Norway: C. LEWENHAUPT.
Turkey: DJÉMAL.
Uruguay: JUAN J. DIAZ.

DRAUGHT OF DECLARATION.

The undersigned, plenipotentiaries of the Governments having signed the convention of the 14th March, 1884, for the protection of submarine cables, having recognized the propriety of determining precisely the sense of the terms of articles 2 and 4 of the said convention, have decided with one accord upon the following declaration:

Certain doubts having arisen as to the meaning of the word "*voluntarily*," inserted in article 2 of the convention of the 14th March, 1884, it is understood that the clause of penal responsibility, mentioned in said article, does not apply to cases of breakage or damages caused accidentally or necessarily while repairing a cable when all precautions have been taken to avoid these breakages or damages.

It is equally understood that article 4 of the convention has had no other object, and should have no other effect, than to charge the proper tribunals of each country with settling in conformity with their laws and according to the circumstances, the question of the civil responsibility of the owner of a cable, who, in the laying or the repairing of this cable, causes the breakage or damage of another cable, as well as the consequences of this responsibility if it is recognized that such exists.

In witness whereof, etc.

No. 2.

Mr. Bayard to Mr. McLane.

No. 174.] DEPARTMENT OF STATE,
Washington, November 24, 1886.

SIR: I have received your No. 305, of the 5th instant, inclosing a communication from M. de Freycinet, in relation to the protocol or declaration adopted at the submarine cables conference in Paris in May last, for the purpose of determining the construction of certain provisions of the convention of March 14, 1884. Immediately upon the reception of your dispatch I sent you the following telegraphic instructions:

McLANE, *Minister, Paris:*

You are authorized to sign protocol explaining cables convention, subject to Senate's approval. Legislation pending before Congress, which meets December 6.

BAYARD.

In this connection I think it proper to say that I received from the French minister at this capital, under date of the 8th July last, a note transmitting proceedings of the cables conference held at Paris in May last, and requesting me to authorize you, by telegraph, to sign the protocol in question unconditionally. The reason given for this request was that, "in order to enable the different Governments, and especially the London cabinet, to adopt such decisions as may be required by an acceptance of the proposed declaration," it was important "to change this draught of a declaration, without delay, to a definitive instrument."

With this request to give you authority to sign the declaration definitely, I did not deem it proper to comply for reasons which I will proceed to state, and which you may make known in a general way to M. de Freycinet.

The object of the declaration in question is to settle the interpretation and effect to be given to the second and fourth articles of the convention of the 14th of March, 1884. The first of these articles has reference to the punishment of persons for the "breaking or injury of a submarine cable, done willfully (*volontairement*) or through culpable negligence," etc. The second article named provides that the "owner of a cable who, by the laying or repairing of that cable shall cause the breaking or injury of another cable, shall be required to pay the cost of the repairs which such breaking or injury shall have rendered nec-

essary, but such payment shall not bar the enforcement, if there be ground therefor, of Article II of this convention."

The declaration reads as follows:

Certain doubts having arisen as to the meaning of the word *volontairement* inserted in Article II of the convention of the 14th of March, 1884, it is understood that the imposition of penal responsibility mentioned in the said article does not apply to cases of breaking or of damage occasioned accidentally or necessarily in repairing a cable, when all precautions have been taken to avoid such breaking or damages.

It is equally understood that Article II of the convention has no other end, and ought to have no other effect, than to charge the competent tribunals of each country with the determination, conformably to their laws and according to circumstances, of the question of the civil responsibility of the proprietor of a cable who, by the laying or repairing of such cable, causes the breaking or damage of another cable, and in the same manner the consequences of that responsibility if it is found to exist.

By the Constitution of the United States treaties made under the authority of the United States are a part of the supreme law of the land, and the convention of the 14th March, 1884, having been made in accordance with the Constitution, is a part of that supreme law.

But, whilst it is true that treaties are a part of the supreme law of the land, they are nevertheless to be viewed in two lights: that is to say, in the light of politics and in the light of juridical law. Where the construction of a treaty is a matter of national policy, the authoritative construction is that of the political branch of the Government. It is the function of the Executive or of Congress, as the case may be. When a political question is so determined, the courts follow that determination. Such was the decision of the Supreme Court in cases arising under the treaty of 1803 with France, of 1819 with Spain, and of 1848 with Mexico.

But where a treaty is to be construed merely as a municipal law, affecting private rights, the courts act with entire independence of the Executive in construing both the treaty and the legislation that Congress may have adopted to carry it into effect. And while great weight might be given by the courts to an opinion of the Executive in that relation, such an opinion would not be regarded as having controlling force.

The declaration in question is intended, as has been seen, to settle two questions. The first is that of penal responsibility under Article II of the convention for the accidental or necessary breaking or injury of a cable in an attempt to repair another cable; the second is that of civil responsibility under Article IV of the convention for injuries done to a cable in an effort to lay or repair another cable.

These are judicial questions to be determined by the courts before whom the appropriate suits may be brought. The only power that can authoritatively construe a treaty for the judicial tribunal on questions of the character described is the legislature, or the treaty-making power itself. In either case the result would be a law which would be binding upon the courts.

It is to be observed in this connection that the treaty in question is not self-executing, and that it requires appropriate legislation to give it effect. If, under these circumstances, the Executive should now assume to interpret the force and effect of the convention, we might hereafter have the spectacle, when Congress acted, of an Executive interpretation of one purport and a different Congressional interpretation, and this in a matter not of Executive cognizance.

For the reasons stated it was not deemed expedient to authorize you to sign the declaration unconditionally. And as the session of Congress was drawing to a close when the note of the French minister was re-

ceived, and it seemed impracticable to secure the Senate's ratification of the declaration before adjournment, it was not thought best to send you such telegraphic instructions as were solicited.

I desire, however, to refer to an incident in our diplomatic history which bears upon the matter under consideration, and which might have been regarded as a precedent for the Executive in this case, if circumstances had seemed to require a different course from that which has been taken. I refer to the protocol which accompanies the treaty of Guadalupe Hidalgo, in the volume of treaties between the United States and other powers.

The treaty as signed at the city of Guadalupe Hidalgo, on the 2d of February, 1848, was so amended by the Senate as to create doubt of its acceptance by the Mexican Government. In order to secure its ratification by that Government, as amended, President Polk sent two commissioners, Mr. A. H. Sevier and Mr. Nathan Clifford, to Mexico, with instructions to explain to the Mexican minister for foreign affairs, or to the authorized agents of the Mexican Government, the reasons which had influenced the Senate in adopting the several amendments.

Before the arrival of the commissioners at the seat of the Mexican Government, the Mexican Congress approved the treaty as amended without modification or alteration, leaving nothing to be performed except the exchange of ratifications, which took place on the 30th of May, 1848. But between the dates of the approval of the treaty by the Mexican Congress and that of the exchange of ratifications, the commissioners had several conferences with the agents of Mexico, the results of which were reduced to the form of a protocol, which was signed by Messrs. Sevier and Clifford on the part of the United States, and Señor Luis de la Rosa on the part of Mexico.

The expressed object of this protocol was to explain the amendments of the Senate. It was defended by the administration on this ground; and in a message to the House of Representatives, the President stated that "had the protocol varied the treaty, as amended by the Senate of the United States, it would have no binding effect." But notwithstanding this explanation, the course of the President in not submitting the protocol to the Senate before the exchange of ratifications of the treaty was severely criticised in Congress.

I inclose herewith a copy of the bill now pending before Congress for the execution of the convention.

I am, etc.,

T. F. BAYARD.

[Inclosure in No. 174.]

A bill to carry into effect the international convention of the fourteenth of March, eighteen hundred and eighty-four, for the protection of submarine cables.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this act shall be known as the "Submarine Cables Act of eighteen hundred and eighty-six."

SEC. 2. That the provisions of this act shall be held to apply only to cables to which the convention of the fourteenth of March, eighteen hundred and eighty-four, which is hereto annexed and herein referred to as the convention, for the time being applies; and, subject to the provisions of this act, the provisions of the convention shall be of the same force as if they were embodied in this act, and shall be taken to be a part hereof.

SEC. 3. That any person who shall willfully break or injure, or attempt to break or injure, or who shall in any manner procure, counsel, aid, abet, or be accessory to such breaking or injury, or attempt to break or injure, a submarine cable, in such manner

as to interrupt or obstruct, in whole or in part, telegraphic communication, shall be guilty of a misdemeanor, and, on conviction thereof, shall be liable to imprisonment for a term not exceeding two years, and to a fine either in lieu of or in addition to such imprisonment not exceeding five thousand dollars.

SEC. 4. That any person who by culpable negligence shall break or injure a submarine cable in such manner as to interrupt or obstruct in whole or in part telegraphic communication shall be guilty of a misdemeanor, and, on conviction thereof, shall be liable to imprisonment for a term not exceeding three months, and to a fine not exceeding five hundred dollars in lieu of or in addition to such imprisonment.

SEC. 5. That the provisions of this act shall not apply to a person who breaks or injures a cable in an effort to save the life or limb of himself or of any other person, or to save his own or any other vessel: *Provided*, That he takes reasonable precautions to avoid such breaking or injury.

SEC. 6. That the provisions of the Revised Statutes from section forty-three hundred to section forty-three hundred and five, inclusive, for the trial of offenses against the navigation laws of the United States, shall extend to the trial of offenses against the provisions of articles five and six of the convention; and a person convicted of an offense against the provisions of the said articles shall be liable to a fine not exceeding five hundred dollars.

SEC. 7. That the penalties provided in this act for the breaking or injury of a submarine cable shall not be a bar to a suit for damages on account of such breaking or injury.

SEC. 8. That the provisions of article four of the convention, in so far as they relate to the payment by the owner of a cable of the cost of repairs of another cable broken or injured in the attempt to lay or repair the former cable, shall not apply to that part of the latter cable which is laid in a depth of water exceeding one hundred fathoms.

SEC. 9. That for the purpose of carrying into effect the convention, a person commanding a ship of war of the United States or of any foreign state for the time being bound by the convention, or a ship specially commissioned by the Government of the United States or by the Government of such foreign state, may exercise and perform the duties vested in and imposed on such officer by the convention.

SEC. 10. That when an offense against this act shall have been committed by means of a vessel, or of any boat belonging to a vessel, the master of such vessel shall, unless some other person is shown to have been in charge of and navigating such vessel or boat, be deemed to have been in charge of and navigating the same, and be liable to be punished accordingly.

SEC. 11. That any document drawn up in pursuance of article seven or article ten of the convention shall be admissible in any proceeding, civil or criminal, as prima facie evidence of the facts or matters stated therein.

SEC. 12. That unless the context of this act otherwise requires, the term "vessel" shall be taken to mean every description of vessel used in navigation, in whatever way it is propelled; the term "master" shall be taken to include every person having command or charge of a vessel; and the term "person" to include a body of persons corporate, or unincorporate.

SEC. 13. That the district courts shall have jurisdiction of all suits of a civil nature arising under this act; and from all decrees or judgments in such suits, where the matter in dispute exceeds the sum of fifty dollars, exclusive of costs, an appeal shall be allowed to the circuit court next to be held in such district, and such circuit court is required to receive, hear, and determine such appeal.

No. 3.

Mr. McLane to Mr. Bayard.

No. 317.] LEGATION OF THE UNITED STATES,
Paris, December 2, 1886. (Received December 17.)

SIR: The conference for the protection of submarine cables met yesterday at the foreign office, and it was agreed informally that to enable the states which have not yet conformed to Article 12 of the convention, it would be put in operation on October 1, instead of January. If at that date there are states unprepared to enforce the convention, it will be applicable to them as fast as they adopt the legislation required by said article 12; each state giving notice of its action to the other con-

tracting parties through the French Government. At our next meeting this understanding will be put in regular shape.

I inclose herewith a printed copy* of the laws passed by Great Britain, Salvador, and Servia to enforce the convention, and beg leave to suggest the propriety of taking some means for securing similar legislation without further delay.

I have, etc.,

ROBERT M. MCLANE.

No. 4.

Mr. McLane to Mr. Bayard.

No. 323.] LEGATION OF THE UNITED STATES,
Paris, December 14, 1886. (Received December 27.)

SIR: I have to acknowledge your No. 174, of November 24, transmitting the draught of the bill now pending before Congress to give effect to the convention for the protection of submarine cables and explaining the constitutional reasons which have prevented you from giving me authority to sign unconditionally the explanatory protocol added to the convention.

I will acquaint the French Government with these reasons, which are perhaps not understood, and I will communicate the bill to the committee of the conference having charge of the matter. It came too late to be printed in the journal of the conference, which on the 6th instant adjourned until the 1st of July next, in order to enable the states which have not yet done so to adopt the legislation necessary for the application of the convention.

In the mean time the execution of the convention is deferred. The conference at its next session will fix the date upon which it is to be put in operation, which date is very likely to be the 1st of October, 1887.

I trust Congress will adopt this session the bill you kindly sent me, for if it does not we will have to ask again for delay. I beg you to communicate this information to the Committee on Foreign Affairs of the Senate and House of Representatives.

I have, etc.,

ROBERT M. MCLANE.

No. 5.

Mr. Bayard to Mr. McLane.

No. 222.] DEPARTMENT OF STATE,
Washington, May 5, 1887.

SIR: I have received your No. 386, of the 6th ultimo, inclosing the original of the explanatory protocol of the 1st of December last to the submarine cables convention, and requesting instructions as to what action you shall take at the next conference of the representatives of the signatory powers, which is to meet in Paris on the 1st of July next. The object of this conference is to agree upon a day at which the con-

*Not printed herewith.

vention shall take effect, and determine the situation of such of the contracting parties as have not adopted appropriate legislation to that end.

Under date of the 14th ultimo I received from the French minister at this capital a note transmitting a dispatch from his Government, inclosing draughts of two final protocols, to which you refer in your dispatch, and which will be laid before the approaching conference. I have answered this note, and inclose herewith a copy of the answer.

The first of the protocols in question proposes absolutely to fix a day upon which the convention shall take effect. But as Congress has not yet adopted legislation to execute the provisions of the convention, no such day can be definitely agreed upon by this Government at the present time. A bill to provide for the execution of the convention passed the House of Representatives on the 8th of February last, and was sent to the Senate, where it was referred, on the 10th of the same month, to the Committee on Foreign Relations, but no definitive action was taken.

The second draught of a protocol, inclosed by the French minister, provided that the convention shall take effect on a day to be fixed by the plenipotentiaries of the signatory powers at their next session at Paris; but it also provides that if on that day any of the Governments in question shall not have adopted the requisite legislation to execute the convention, its operation shall be suspended as regards such state until notice shall be given by it to the contracting parties, through the French Government, of the adoption of appropriate legislation. To this protocol no objection is found, and you are hereby authorized to sign it, subject to the ratification of the Senate, before which body the explanatory protocol above referred to is now pending, and as the convention is now awaiting, for its execution, the action of Congress, it is not apprehended that this course will be productive of any delay.

I am, etc.,

T. F. BAYARD.

No. 6.

Mr. McLane to Mr. Bayard.

No. 405] LEGATION OF THE UNITED STATES,
Paris, May 13, 1887. (Received May 24.)

SIR: I received this morning from Mr. Flourens a dispatch having reference to the language of section 8 of a bill pending before Congress to enforce the convention for the protection of submarine cables. Mr. Flourens reminds me that the protocol and declaration of May 21, 1886, was intended to correct the construction placed upon articles 2 and 4 of the convention by article 4 of the British act of 1885, and remarks that all the powers parties to the convention, Great Britain and the United States comprised, having agreed to this protocol and declaration, the bill before Congress should conform to its disposition; otherwise the date of the application of the convention will have to be again deferred.

In my dispatch No. 325, of December 17, 1886, I had called your attention to the fact that section 8 of our bill reproduced article 4 of the British act, to which the conference had taken exception, and explained the intention of the authors of the convention.

Not having heard of the matter since, I was under the impression that the necessary change had been made, and I feel much embarrassed that such has not been the case. Mr. Flourens hopes that you will be

able, through the Committee of Foreign Affairs, to induce Congress at the opening of the next session to conform the bill in question with the text and spirit of the convention.

I respectfully join him in making this recommendation, and earnestly request that I be authorized to assure the conference, when it meets again in July, that the bill in question will be amended as desired, and that there will be no objection on the part of the United States to the enforcement of the convention on the 1st of January next at the latest.

I have the honor to be, etc.,

ROBERT M. MCLANE.

Hon. THOMAS F. BAYARD,
Secretary of State.

No. 7.

Mr. McLane to Mr. Bayard.

No. 406.] LEGATION OF THE UNITED STATES,
Paris, May 16, 1887. (Received May 27.

SIR: Since writing and telegraphing to you on the 13th instant with reference to the bill for the execution of the submarine cables convention, I have received your dispatch No. 222 of May 5th and your telegram of the 14th, informing me that the bill in question had not been acted upon by Congress, and instructing me accordingly to sign, when the conference meets again in July, the second of the protocols submitted by the French Government, which provides that, if on the day fixed for the convention to go into effect any of the signatory powers have not adopted the requisite legislation, its operation shall be suspended, as regards such state, until notice shall be given by it to the French Government of the adoption of the appropriate legislation.

I inclose herewith copy of translation of Mr. Flourens's note of the 13th instant, mentioned in my No. 405 of the same date, requesting me to call your attention to the fact that section 8 of the bill which passed the House is contrary to the sense of the convention as explained by the declaration of May 1, 1886.

Being satisfied that you would have this defect corrected, I shall add nothing to what I said in my No. 405 with reference to the subject.

I have the honor to be, etc.,

ROBERT M. MCLANE.

[Inclosure in No. 406.—Translation.]

Mr. Flourens to Mr. McLane.

FOREIGN OFFICE,
Paris, May 12, 1887.

By a communication dated December 26, 1885, the minister of foreign affairs has made known to the United States legation at Paris that a divergency had been noticed between the dispositions of articles 4 of the convention for the protection of submarine cables and those of section 4 of the submarine telegraph act of 1885, voted by the British Parliament to secure the observation of the international act of March 14, 1884.

On account of the difficulties raised by the restrictions which section 4 of the British act made with reference to one of the stipulations of the convention, the Government

of the French Republic proposed, at the date above mentioned, to the different signatory powers to defer the execution of the convention and to call at Paris in May, 1886, another conference to examine what solution could be given to the question.

This conference met on the 12th of May last year, and, as known by the United States minister at Paris, who represented there his Government, the delegates of the different powers agreed upon a project of explanatory declaration of articles 2 and 4 of the convention of March 14, 1884.

The acceptance by Great Britain of the terms of this project removed the divergency existing between the language of the convention and that of the British act, and caused the abandonment by the English Government of the dispositions inserted in section 4 of the act in question; consequently another act, a copy of which is herewith annexed [not received], was adopted September 25, 1885, to repeal that section.

On the other side the explanatory declaration agreed upon by the delegates, May 21, 1886, has been accepted by the twenty-five signatory powers of the convention of March 14, 1884. The diplomatic instrument of this declaration was signed at Paris, December 1 and March 23 last, by the representatives of the different Governments at Paris, and it was transmitted to the legation of the United States on April 1.

In explaining the sense of articles 2 and 4, the declaration of December 1 and March 23, 1887, suppressed the divergency of the interpretation and the difficulties which had caused the insertion in the submarine telegraph act of 1885 of the section 4, since repealed.

Now, according to information which has reached the French Government, the bill presented by the Committee on Foreign Affairs and voted by Congress to insure the enforcement of the convention of March 14, 1884, contains in its article 8 a disposition identical with the old section 4 of the British act. The insertion and the maintenance in a bill already voted by the American Congress after the third reading of this article 8, which is contrary to the stipulations of the International Convention of March 14, 1884, must come from a misunderstanding, for the United States Government have adhered to the explanatory declaration of December 1, 1886, and March 23, 1887, which had precisely for its object to avoid the article in question.

The minister of foreign affairs has the honor of pointing out specially this subject to the United States minister at Paris, who has taken such an active part in the debates of the conference concerning the execution of the convention, and begs him to call the attention of his Government to this misunderstanding, which might bring further delays in enforcing the convention. If this article (8) was definitely adopted it would be impossible to state that the different interested powers have all enacted similar measures for the execution of the convention of 1884; consequently it would be impossible to fix the time from which it would become operative.

The Government of the Republic hopes, therefore, that the Federal Government will take, without delay, the necessary steps in order that the committee for foreign affairs may introduce urgently a rectifying bill repealing the dispositions of article 8 of the one already adopted by Congress, or, if preferable, that the American Senate, which has not yet considered the bill, amend it by suppressing this article 8 contrary to the convention, and without any object since the interpretation given to articles 2 and 4 of the convention by the explanatory declaration.

Mr. Flourens seizes this occasion, etc.,

PARIS, *May* 12, 1887.

No. 8.

Mr. McLane to Mr. Bayard.

No. 446.] LEGATION OF THE UNITED STATES,
Paris, July 15, 1887. (Received July 25.)

SIR: The conference relative to the protection of submarine cables met pursuant to its resolution of adjournment on the 1st of July at the ministry of foreign affairs.

The minister of foreign affairs opened the session, and explained that five powers, namely, the Argentine Republic, Austria, Brazil, the United States, and Roumania, had not yet passed the necessary laws to carry into execution the twelfth article of the convention. Since the adjournment in December last Germany, Spain, Guatemala, and Russia, all four of which were then in default, have enacted the necessary laws for carrying out the convention.

The minister of foreign affairs requests the representatives of the five states named as still in default to make such explanations in reference to this default as they might think necessary.

These explanations were made, and there appeared to be no material obstacle to the passage of the necessary laws at such time as might suit the convenience of the legislative bodies of the several countries in question, and all five of the representatives agreed to sign protocol No. 2, adopted at the December session of the conference, in virtue of which the convention would go into operation for all the powers that had voted the necessary laws to execute it, leaving the others to communicate through the French Government the adoption of their respective laws for its execution, at which time they would become subject to the operation of the convention.

At this state of the conference the representative of Great Britain expressed the desire of his Government that the convention should not go into operation until all the parties to it had adopted the necessary legislation to give it full effect, and he referred especially to the United States as one of the powers most interested in the question whose legislation had not yet been consummated. In pursuance of this view he proposed an adjournment until all the parties to the convention had enacted the necessary laws to give it effect. This view of the British delegate met with very little encouragement, and with entire unanimity the conference determined to fix a day (1st of May, 1888) for the convention to go into operation, provided all the parties to it had enacted laws for its execution, and protocol No. 2 was modified in that sense, and all the representatives to the conference agreed to sign it as modified *ad referendum* to their respective governments.

I inclose herewith a translated copy thereof and the original duly signed by the representatives of all the powers, and I can not too strongly urge upon you the necessity of legislation by Congress prior to the 1st of May to give effect to the convention. In this connection I beg to call your attention to the fact that the law which passed the House of Representatives at its last session, and which was pending in the Senate at its adjournment, was defective in fixing a particular depth, say 100 fathoms, within which limit its provisions should not apply. No limit whatever would satisfy the terms of the convention, and Great Britain was obliged to amend the original statute enacted for its execution because of such a limitation.

I have, etc.,

ROBERT M. MCLANE.

[Inclosure in No. 446.—Translation.]

Protocol No. 2, as modified.

The undersigned, plenipotentiaries of the governments parties to the convention of the 14th March, 1884, for the protection of submarine cables, assembled at Paris, for the purpose of deciding, in conformity with article 16 of this international convention, upon the date of putting said convention into execution, have agreed upon the following:

I. The international convention of the 14th March, 1884, for the protection of submarine cables shall go into force the 1st of May, 1888, provided, however, that at that date those of the contracting governments who have not yet adopted the measures provided for by article 12 of the said international convention shall have conformed with this stipulation.

II. The measures that the above-mentioned states shall have taken in execution of the aforesaid article 12 shall be made known to the other contracting powers through

the intermediation of the French Government, charged with examining the general character of them.

III. The Government of the French Republic remains also charged with the examination of the same legislative provisions or rules that the states who have not taken part in the convention, and who shall wish to take advantage of the power of adhesion provided for by article 14, may adopt in their respective countries, in order to conform to article 12.

In witness whereof the undersigned plenipotentiaries have agreed upon the present final protocol, which shall be considered as making an integral part of the international convention of the 14th March, 1884.

No. 9.

Mr. Roustan to Mr. Bayard.

LEGATION OF THE FRENCH REPUBLIC
IN THE UNITED STATES,
Washington, April 14, 1887.

MR. SECRETARY OF STATE: I have the honor herewith to transmit to you a copy of a dispatch, with inclosures, which has just been addressed to me by my Government in relation to the convention for the protection of submarine cables.

I should be very grateful to you if you could enable me, at no distant date, to reply to the inquiry of the minister of foreign affairs.

Be pleased to accept, etc.,

TH. ROUSTAN.

Mr. Flourens to Mr. Roustan.

MINISTRY OF FOREIGN AFFAIRS,
BUREAU OF COMMERCIAL AND CONSULAR BUSINESS,
Paris, March 28, 1887.

SIR: By a circular bearing date of January 14, I requested you to transmit to the Government to which you are accredited the reports of the sessions which the delegates of the signatory powers of the convention of March 14, 1884, for the protection of submarine cables, held at Paris from the 1st to the 8th of December last, with a view to having that international instrument put into execution.

As I stated at that time, it appeared from those reports that the delegates had adjourned their labors until July 1, 1887, and that the date at which the convention in question was to be put into execution was then to be finally determined.

Referring to that communication, and to the statements made by the presiding officer of the conference during the session of November 1, I will thank you to inform the minister of foreign affairs of the United States that the German Government has just signed the declaration which serves to explain articles 2 and 4 of the convention of March 14, 1884. The signatures of the representatives of the twenty-five powers that ratified the convention have thus been affixed to this declaration.

The time has consequently now arrived for the various governments to agree, in accordance with the provisions of article 16, as to the final appointment of a day on which the convention of March 14, 1884, is to become operative. It is proposed that an agreement on this subject be adopted at the projected meeting, which is to take place on the 1st of July next, and that two other points be likewise settled there, viz:

(1) The determination (the case arising) as to what is to be the situation of such of the signatory powers of the convention as may not yet have adopted the measure provided for by article 12 of that diplomatic instrument.

(2) The determination how the various contracting states are to ascertain that those powers that have not signed the convention, and that avail themselves of the privilege of accession, have taken, as regards themselves, the measures stipulated for in the convention in order to secure its observance.

With a view to practically facilitating an understanding on these different points, inasmuch as the attainment of such understanding is hampered by the number of the

contracting parties, it would be well for the delegate of the United States at the conference which is to be held in July next to be invested with the character of a plenipotentiary, and furnished with the necessary power or authority:

1. To accept, not in his own individual name but in that of his Government, as regards the taking effect of the convention, the date that shall be approved by the different Governments, which, if we may judge from the views exchanged during the last conference, will probably be the 1st of October next.

2. To determine, as regards their co-signers, the situation of those contracting powers that may not be able to put the convention into execution at the time fixed upon.

3. Finally, to decide upon the method to be adopted in order to ascertain whether such states as desire to accede to the convention have laws that permit them to guarantee the enforcement of its stipulations.

In the opinion of the Government of the Republic, the agreement reached on these different points should be placed on record in a final proctocol (*proctocole de clôture*), which might be drawn up in the form of either of the accompanying drafts, the first of which has been prepared on the more probable hypothesis, viz, that all the signatory states will be able to show that article 12 of the convention has been put into execution; and the second in case that one of these states may be unable fully to execute the stipulations of the convention of March 14, 1884.

The signing and putting into execution of the provisions of this draft of a final protocol do not seem likely to require any new constitutional formalities in the different contracting countries.

The convention, before the exchange of the ratifications was submitted to the legislative bodies in those states in which their sanction was necessary, and as article 16 of the convention stipulated that it should be put into execution on the day on which the high contracting parties should agree, the directing powers have been authorized to decide among themselves upon the measures designed to secure the execution of this international instrument.

I will thank you, sir, to transmit a copy of this dispatch to the Government to which you are accredited, requesting it to be pleased to inform you, with as little delay as possible, before the meeting of the delegates, whether, as we hope, the inclosed draft of a final protocol of the conference for putting into execution the convention of March 14, 1884, calls for no observation in principle on its part.

You will be pleased at the same time to represent to the Washington Cabinet, which has not yet adopted the measures provided for in the twelfth article of the convention, how important it is that the measures should be definitely decided upon by the competent authorities before the 1st of July next, so that the conference may be informed thereof at its first meeting.

Accept, etc.,

FLOURENS.

[Inclosure No. 1.]

Draft of a final protocol.

The undersigned, plenipotentiaries of the signatory Governments of the convention of March 14, 1884, for the protection of submarine cables, having met in conference at Paris, for the purpose of deciding, in pursuance of article 16 of that international instrument, upon a day for putting the said convention into execution, have agreed upon the following:

I. The convention of March 14, 1884, for the protection of submarine cables, shall take effect on the —— ——, 1887.

II. The Government of the French Republic is charged with the examination of the legislative or reglementary provisions to be adopted in their respective countries, in order to meet the requirements of article 12 of the convention, by such states as have not become parties to the said convention, and as may desire to avail themselves of the privilege of accession provided for in article 14.

In testimony whereof, the undersigned plenipotentiaries have adopted this final protocol, which shall be considered as forming an integral part of the international convention of March 14, 1884.

PARIS, —— ——, 1887.

[Inclosure No. 2.]

Draft of a final protocol.

The undersigned, plenipotentiaries of the signatory Governments of the convention of March 14, 1884, for the protection of submarine cables, having met at Paris for the purpose of deciding, in pursuance of article 16 of that international instrument,

upon a day for putting the said convention into execution, have agreed upon the following:

I. The international convention of March 14, 1884, for the protection of submarine cables, shall take effect on the —— ——, 1887.

II. In case that at the time above fixed for the convention to take effect, the Governments of —— ——, which have not yet adopted the measures provided for in article 12 of that international instrument, shall not have acted in conformity with that stipulation, it is understood that the effects of the convention of March 14, 1884, shall be suspended, as regards each of those states, until the time when notice of the measures adopted by them, in execution of the said article 12, shall have been given to the other contracting powers, through the French Government, which is charged with the examination of such measures.

III. The Government of the French Republic is likewise charged with examination of the legislative or reglementary measures that are to be adopted, in their respective countries, in pursuance of article 12, by such states as have not yet become parties to the convention, and as may desire to avail themselves of the privilege of accession provided for in article 14.

In testimony whereof, the undersigned plenipotentiaries have adopted this final protocol, which shall be considered as forming an integral part of the international convention of March 14, 1887.

PARIS, —— ——, 1887.

No. 10.

Mr. Bayard to Mr. Roustan.

DEPARTMENT OF STATE,
Washington, May 5, 1887.

SIR: I have had the honor to receive your note of the 14th ultimo, transmitting a dispatch, with inclosures, addressed to you by your Government in relation to the convention for the protection of submarine cables, and particularly requesting you to ascertain the situation and intentions of this Government with respect to that convention.

As the bill which was pending before the last Congress to execute the provisions of the convention was not definitively acted upon by that body it is not thought that this Government is in a position to authorize its diplomatic representative at Paris to sign the draught of a final protocol, marked in your note as inclosure No. 1, which is intended to fix a certain day for the convention to take effect.

The second draught of a protocol, marked inclosure No. 2, provides that the convention shall take effect on a day to be fixed by the plenipotentiaries of the signatory powers at their next session at Paris; but it also provides that if, on that day, any of the Governments in question shall not have adopted the requisite legislation to execute the convention, its operation shall be suspended as regards such state until notice shall be given by it to the contracting parties, through the French Government, of the adoption of appropriate legislation. To this protocol no objection is found, and the minister of the United States at Paris will be empowered to sign it. In order, however, that it may be considered, in the terms of its last clause, "as forming an integral part of the international convention of March 14, 1887, the protocol will be submitted to the Senate (before which body the explanatory protocol signed on the 1st of December last is now pending) at its next session; and as the convention is now awaiting for its execution the action of the next Congress, it is not supposed that the course stated will be productive of any delay.

Accept, etc.,

T. F. BAYARD.

No. 11.

Count Sala to Mr. Bayard.

[Translation.]

LEGATION OF THE FRENCH REPUBLIC
IN THE UNITED STATES,
Washington, July 8, 1887. (Received July 9.)

Mr. SECRETARY OF STATE: By a circular bearing date of the 19th of December last the representatives of the Republic near the various Governments which signed the convention of March 14, 1884, for the protection of submarine cables were instructed to propose to those Governments the holding of a conference with a view to the execution of article 12 of that international instrument.

The delegates of the various powers which accepted the invitation of the French Government met at Paris on the 12th of May last, and suspended their labors on the 22d of the same month, after having arranged, in a protocol, the terms of the draught of a declaration which they pledged themselves to recommend to their respective Governments for adoption.

I have the honor herewith to transmit to you twenty copies of the report of the proceedings of the conference in question. This report contains the text of the protocol that was signed by the delegates on the 21st of May last, official notice of which it is incumbent upon the Government of the Republic to give to the various states which signed the convention of March 14, 1884, or which have acceded thereto. This instrument consists of a declaration explanatory of articles 2 and 4 of the convention of March 14, 1884, and removes the difficulties that were originated by the restriction introduced in article 4 of the English law for the execution of the convention relative to the scope of its fourth article.

In order to enable the different Governments, and especially the London cabinet, to adopt such decisions as may be required by an acceptanc of the proposed declaration, it is important to change this draught of a declaration, without delay, to a definitive instrument. I am consequently instructed, Mr. Secretary of State, to request you to be pleased to authorize the representative of the Federal Government at Paris, as soon as possible, by telegraph, to sign the declaration. My Government would be very glad if this formality could be accomplished without any unnecessary delay.

In the course of its labors the conference found that of the twenty-five states that have ratified the convention relative to submarine cables, or that have acceded thereto, twelve (Germany, the Argentine Republic, Austria-Hungary, Brazil, Spain, the United States, Guatemala, Roumania, Russia, Salvador, Servia, and Turkey) have not yet enacted or promulgated the laws necessary to render the convention operative. In this connection it is well not to lose sight of the fact that the penal clauses of the convention are not sufficient to secure the repressions of the infractions for which it provides, since that instrument does not specify what punishment is to be inflicted. It is therefore necessary, in order that the convention may become operative on this point in each state, that the laws of that state should contain express provisions for the repression of any violation of the articles which declare punishable certain acts of injury or destruction (article 2) of submarine cables; or that they should prescribe for vessels engaged in laying or repairing cables certain rules calculated to facilitate operations relative to cables. (Articles 5 and 6.)

Owing to the deficiencies thus found to exist in the laws of a certain number of countries, the conference was able to perform but a part of

its task, and it adjourned to the 1st of December next, with a view to allowing to the above-named states the time necessary for them to make known what legislative enactments they propose to promulgate in order to meet the engagement growing out of article 12 of the convention.

As most of the Governments have adhered, at least in principle, to the second proposition, which formed the subject of M. de Freycinet's circular of 19th of December last, and the object of which was to fix the 1st day of January, 1887, as the time when the international instrument of March 14, 1884, should take effect, the convention, at its meeting on the 1st of December next, will not only have to examine the new laws that shall be communicated to it, but it will also have to prepare definitively the list of the states forming the union for the protection of submarine cables. It is therefore necessary that the delegate of the United States should be furnished with precise instructions as regards the decision to be adopted in the case of states that shall not be able by the 1st of December next to show that they have enacted laws that meet the requirements of article 12 of the convention. I need not, therefore, remind you, Mr. Secretary of State, how important it is that all legislative enactments necessary to render the convention operative should be adopted by the United States before the next meeting of the delegates in order that the conference may take cognizance thereof.

I will recapitulate these remarks. The object of the communication which I am instructed to make to the American Government is twofold, viz:

1st. To request it to authorize its representative at Paris, with as little delay as possible, to sign the explanatory declaration adopted by the conference which met at Paris on the 12th of May last.

2d. To call its attention to the necessity of enacting, before the 1st of December next, such laws or of adopting such regulations as may be necessary to render the convention operative; and, further, to call attention to the fact that it is very important that the delegate of the United States should be able to make known at the next meeting of the conference the views of his Government in relation to the situation of the signatory powers that shall be unable to put the convention into execution on the 1st day of January, 1887.

I should be grateful to you, Mr. Secretary of State, if you could enable me, as speedily as possible, to make known at Paris the reply of the Federal Government.

Be pleased to accept, etc.,

SALA.

The Hon. THOMAS F. BAYARD,
Secretary of State of the United States.

No. 12.

Mr. Roustan to Mr. Bayard.

[Translation.]

LEGATION OF THE FRENCH REPUBLIC
IN THE UNITED STATES,
Washington, November 1, 1887.

Mr. SECRETARY OF STATE: The international conference for putting into execution the convention of March 14, 1884, for the protection of submarine cables, reassembled at Paris on the 1st of July last.

This conference, the object of which was explained to you by the ministerial circular contained in my note of April 14, 1887, terminated its labors on the 7th of July by signing a final protocol, according to which the convention of March 14, 1884, is to go into operation on the 1st day of May, 1888, on condition, however, that the five states that have not yet adopted the measures provided for by article 12, viz, the Argentine Republic, Austria-Hungary, Brazil, the United States, and Roumania, shall at that time have conformed to the said stipulation.

It is consequently important that the American Congress should take, before that date, such action as is necessary to secure the observance of the convention of March 14, 1884, in the United States.

The House of Representatives, having this object in view, passed a bill on the 8th of February last, which contained in its eighth section a provision which conflicted with the convention, inasmuch as it limited the scope of article 4, as had previously been done by the English act of 1885, in lieu of which the submarine telegraph act of 1886 has since been passed. The bill in question, which would have caused additional delays before the convention could have gone into operation, was not passed at the time by the Senate, and is now null and void, owing to the fact that the present Congress is a new one. The Government of the Republic therefore hopes that the Federal Government will be pleased to arrange matters with the committees of Congress on foreign affairs, so that the bill of February 8 may not be taken up again, or at least so that the eighth article may not be inserted therein, as that article must have grown out of a misunderstanding, inasmuch as the United States Government adhered to the interpretative declaration of December 1, 1886, and March 23, 1887, which should have resulted in preventing the presentation of the article in question.

In pursuance of my instructions, I have the honor, Mr. Secretary of State, herewith to transmit to you twenty copies of the report of the two meetings held during their last session by the representatives of the powers that were parties to the international instrument of March 14, 1884. You will observe that the German Government, although not represented at the conference, signed the final protocol, which has consequently been approved by all the powers composing the Union for the protection of submarine cables.

Be pleased to accept, etc.,

TH. ROUSTAN.

No. 13.

Mr. Roustan to Mr. Bayard.

[Translation.]

LEGATION OF THE FRENCH REPUBLIC
IN THE UNITED STATES,
Washington, December 10, 1887.

Mr. SECRETARY OF STATE:

On the 2d of November last I had the honor to write to your excellency begging you, in the name of my Government, to submit as soon as possible to the Congress the legislative measures intended to assure the execution of the convention of March, 1884, for the protection of submarine cables.

I receive to-day a new communication from Mr. Flourens, who charges me to represent to you the urgency of this question, in order to enable the enforcement of the convention in question, which, for divers reasons, has already been postponed from time to time until the 1st of May next, and which at present is only retarded by the want of the legal formalities on the part of the Government of the United States.

My Government would be very grateful to you, Mr. Secretary of State, if you would be pleased to submit this question to the urgent examination of Congress.

In referring to my previous communications in this regard, and especially to my note verbale of December, 1886, I permit myself to remind your excellency of the amendment necessary to be made in the draught of the bill presented to Congress last year. This correction consists in the suppression of section 8, which, if adopted, would render all the rest useless for the execution of the convention.

The same error was committed in the English bill of 1885, but has since been corrected by the "Submarine Telegraph Act" of 1886.

Accept, etc.,

TH. ROUSTAN.

Hon. THOMAS F. BAYARD,
Secretary of State of the United States.

No. 14.

Convention between the United States of America and Germany, Argentine Confederation, Austria-Hungary, Belgium, Brazil, Costa-Rica, Denmark, Dominican Republic, Spain, United States of Colombia, France, Great Britain, Guatemala, Greece, Italy, Turkey, Netherlands, Persia, Portugal, Roumania, Russia, Salvador, Servia, Sweden and Norway, and Uruguay, for the protection of submarine cables, with an additional article concerning the means provided for admitting to the privileges of the convention the Colonies of Great Britain, namely: Canada, Newfoundland, the Cape of Good Hope, Natal, New South Wales, Victoria, Queensland, Tasmania, South Australia, West Australia, and New Zealand.

[Concluded at Paris March 14, 1884. Ratification advised by the Senate June 12, 1884. Ratified by the President January 26, 1885. Ratifications by eighteen of the signatory powers exchanged at Paris, April 16, 1885. Proclaimed May 22, 1885. The convention, by agreement between the contracting parties, will become operative January 15, 1886.]

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION.

Whereas, a Convention for the protection of submarine cables between the United States of America and His Majesty the Emperor of Germany, King of Prussia, His Excellency the President of the Argentine Confederation, His Majesty the Emperor of Austria, King of Bohemia, etc., Apostolical King of Hungary, His Majesty the King of the Belgians, His Majesty the Emperor of Brazil, His Excellency the President of the Republic of Costa Rica, His Majesty the King of Denmark, His Excellency the President of the Dominican Republic, His Majesty the King of Spain, His Excellency the President of the United States of Colombia, His Ex-

cellency the President of the French Republic, Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, His Excellency the President of the Republic of Guatemala, His Majesty the King of the Hellenes, His Majesty the King of Italy, His Majesty the Emperor of the Ottomans, His Majesty the King of the Netherlands, Grand Duke of Luxemburg, His Majesty the Shah of Persia, His Majesty the King of Portugal and the Algarves, His Majesty the King of Roumania, His Majesty the Emperor of all the Russias, His Excellency the President of the Republic of Salvador, His Majesty the King of Servia, His Majesty the King of Sweden and Norway, and His Excellency the President of the Oriental Republic of Uruguay, was concluded and signed by their respective plenipotentiaries at Paris on the fourteenth day of March, one thousand eight hundred and eighty-four, the original of which, being in the French language, is word for word as follows:

Son Excellence le Président des États-Unis d'Amérique, Sa Majesté l'Empereur d'Allemagne, Roi de Prusse, Son Excellence le Président de la Confédération Argentine, Sa Majesté l'Empereur d'Autriche, Roi de Bohême, etc., Roi apostolique de Hongrie, Sa Majesté le Roi des Belges, Sa Majesté l'Empereur du Brésil, Son Excellence le Président de la République de Costa-Rica, Sa Majesté le Roi de Danemark, Son Excellence le Président de la République Dominicaine, Sa Majesté le Roi d'Espagne, Son Excellence le Président des États-Unis de Colombie, Son Excellence le Président de la République Française, Sa Majesté la Reine du Royaume-Uni de la Grande Bretagne et d'Irlande, Impératrice des Indes, Son Excellence le Président de la République de Guatémala, Sa Majesté le Roi des Hellènes, Sa Majesté le Roi d'Italie, Sa Majesté l'Empereur des Ottomans, Sa Majesté le Roi des Pays-Bas, Grand Duc de Luxembourg, Sa Majesté le Schah de Perse, Sa Majesté le Roi de Portugal et des Algarves, Sa Majesté le Roi de Roumanie, Sa Majesté l'Empereur de toutes les Russies, Son Excellence le Président de la République de Salvador, Sa Majesté le Roi de Serbie, Sa Majesté le Roi de Suède et Norvège, et Son Excellence le Président de la République Orientale de l'Uruguay, désirant assurer le maintien des communications télégraphiques, qui ont lieu au moyen des câbles sous-marins, ont résolu de conclure une Convention à cet effet et ont nommé pour leurs Plénipotentiaires, savoir:

Son Excellence le Président des États-Unis d'Amérique, M. L. P. Morton, Envoyé extraordinaire et Ministre plénipotentiaire des États-Unis d'Amérique à Paris, etc., etc., etc.; et M. Vignaud, Secrétaire de la Légation des États-Unis d'Amérique à Paris, etc., etc., etc.;

Sa Majesté l'Empereur d'Allemagne, Roi de Prusse, Son Altesse le Prince Chlodwig Charles Victor de Hohenlohe-Schillingsfurst, Prince de Ratibor et Corvey, Grand Chambellan de la couronne de Bavière, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Son Excellence le Président de la Confédération Argentine, M. Balcarce, Envoyé extraordinaire et Ministre plénipotentiaire de la Confédération à Paris, etc., etc., etc.;

Sa Majesté l'Empereur d'Autriche, Roi de Bohême, etc., Roi apostolique de Hongrie, Son Excellence M. le Comte Ladislas Hoyos, Conseiller intime actuel, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Sa Majesté le Roi des Belges, M. le baron Beyens, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.; et M. Léopold Orban, Envoyé extraordinaire et Ministre plénipotentiaire, Direc-

teur Général de la Politique au Département des Affaires étrangères de Belgique, etc., etc., etc.;

Sa Majesté l'Empereur du Brésil, M. d'Araujo, Baron d'Itajubá, Chargé d'Affaires du Brésil à Paris, etc., etc., etc.;

Son Excellence le Président de la République de Costa-Rica, M. Léon Somzée, Secrétaire de la Légation de Costa-Rica à Paris, etc., etc., etc.;

Sa Majesté le Roi de Danemark, M. le Comte de Moltke-Hvitfeldt, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.;

Son Excellence le Président de la République Dominicaine, M. le Baron de Almeda, Envoyé extraordinaire et Ministre plénipotentiaire de la République Dominicaine à Paris, etc., etc., etc.;

Sa Majesté le Roi d'Espagne, Son Excellence M. Manuel Silvela de le Vielleuse, Sénateur inamovible, membre de l'Académie Espagnole, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement da la République Française, etc., etc., etc.;

Son Excellence le Président des États-Unis de Colombie, M. le Docteur José G. Triana, Consul Général des États-Unis de Colombie à Paris, etc., etc.; etc.;

Son Excellence le Président de la République Française, M. Jules Ferry, Député, Président du Conseil, Ministre des Affaires Étrangères, etc., etc., etc.; et M. Adolphe Cochery, Député, Ministre des Postes et des Télégraphes, etc., etc., etc.;

Sa Majesté la Reine du Royaume-Uni de la Grande Bretagne et d'Irlande, Impératrice des Indes, Son Excellence le très-honorable Richard Bikerton Pemell, Vicomte Lyons, Pair du Royaume-Uni de la Grande Bretagne et d'Irlande, Membre du Conseil privé de Sa Majesté Britannique, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Son Excellence le Président de la République de Guatémala, M. Crisanto Medina, Envoyé extraordinaire et Ministre plénipotentiaire de la République de Guatémala à Paris, etc., etc., etc.;

Sa Majesté le Roi des Hellènes, M. le Prince Maurocordatos, Son Envoyé extraordinaire et Ministre Plénipotentiaire à Paris, etc., etc., etc.;

Sa Majesté le Roi d'Italie, Son Excellence M. le Général Comte Menabrea, Marquis de Valdora, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Sa Majesté l'Empereur des Ottomans, Son Excellence Essad Pacha, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Sa Majesté le Roi des Pays-Bas, Grand Duc de Luxembourg, M. le Baron de Zuylen de Nyevelt, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.;

Sa Majesté le Schah de Perse, M. le Général Nazare-Aga, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.;

Sa Majesté le Roi de Portugal et des Algarves, M. d'Azevedo, Chargé d'Affaires de Portugal à Paris, etc., etc., etc.;

Sa Majesté le Roi de Roumanie, M. Alexandre Odobesco, Chargé d'Affaires, *par interim*, de Roumanie à Paris, etc., etc., etc.;

Sa Majesté l'Empereur de toutes les Russies, Son Excellence M. l'Aide-de-Camp Général Prince Nicolas Orloff, Son Ambassadeur extraordinaire et plénipotentiaire près le Gouvernement de la République Française, etc., etc., etc.;

Son Excellence le Président de la République de Salvador, M. Torres Caïcedo, Envoyé extraordinaire et Ministre plénipotentiaire de la République de Salvador à Paris, etc., etc., etc.;

Sa Majesté le Roi de Serbie, M. Marinovitch, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.;

Sa Majesté le Roi de Suède et Norvège, M. Sibbern, Son Envoyé extraordinaire et Ministre plénipotentiaire à Paris, etc., etc., etc.;

Son Excellence le Président de la République Orientale de l'Uruguay, M. le Colonel Diaz, Envoyé extraordinaire et Ministre plénipotentiaire de la République de l'Uruguay à Paris, etc., etc., etc.;

Lesquels, après avoir échangé leurs pleins pouvoirs, trouvés en bonne et due forme, sont convenus des articles suivants:

Article I.

La présente Convention s'applique, en dehors des eaux territoriales, à tous les câbles sous-marins légalement établis et qui atterrissent sur les territoires, colonies ou possessions de l'une ou de plusieurs des Hautes Parties contractantes.

Article II.

La rupture ou la détérioration d'un câble sous-marin, faite volontairement ou par négligence coupable, et qui pourrait avoir pour résultat d'interrompre ou d'entraver, en tout ou en partie, les communications télégraphiques est punissable, sans préjudice de l'action civile en dommages et intérêts.

Cette disposition ne s'applique pas aux ruptures ou détériorations dont les auteurs n'auraient eu que le but légitime de protéger leur vie ou la sécurité de leurs bâtiments, après avoir pris toutes les précautions nécessaires pour éviter ces ruptures ou détériorations.

Article III.

Les Hautes Parties contractantes s'engagent à imposer, autant que possible, quand elles autoriseront l'atterrissement d'un câble sous-marin, les conditions de sûreté convenables, tant sous le rapport du tracé que sous celui des dimensions du câble.

Article IV.

Le propriétaire d'un cable qui, par la pose ou la réparation de ce câble, cause la rupture ou la détérioration d'un autre câble doit supporter les frais de réparation que cette rupture ou cette détérioration aura rendus nécessaires, sans préjudice, s'il y a lieu, de l'application de l'article II. de la présente Convention.

Article V.

Les bâtiments occupés à la pose ou à la réparation des câbles sous-marins doivent observer les règles sur les signaux qui sont ou seront adoptées, d'un commun accord, par les Hautes Parties contractantes, en vue de prévenir les abordages.

Quand un bâtiment occupé à la réparation d'un câble porte lesdits signaux, les autres bâtiments qui aperçoivent ou sont en mesure d'apercevoir ces signaux doivent ou se retirer ou se tenir éloignés d'un mille nautique au moins de ce bâtiment, pour ne pas le gêner dans ses opérations.

Les engins ou filets des pêcheurs devront être tenus à la même distance.

Toutefois, les bateaux de pêche qui aperçoivent ou sont en mesure, d'apercevoir un navire télégraphique portant lesdits signaux auront pour se conformer à l'avertissement ainsi donné, un délai de vingt-quatre heures au plus, pendant lequel aucun obstacle ne devra être apporté à leurs manœuvres.

Les opérations du navire télégraphique devront être achevées dans le plus bref délai possible.

ARTICLE VI.

Les bâtiments qui voient ou sont en mesure de voir les bouées destinées à indiquer la position des câbles, en cas de pose, de dérangement ou de rupture, doivent se tenir éloignés de ces bouées à un quart de mille nautique au moins.

Les engins ou filets des pêcheurs devront être tenus à la même distance.

ARTICLE VII.

Les propriétaires des navires ou bâtiments qui peuvent prouver qu'ils ont sacrifié une ancre, un filet ou un autre engin de pêche, pour ne pas endommager un câble sous-marin, doivent être indemnisés par le propriétaire du câble.

Pour avoir droit à une telle indemnité, il faut, autant que possible, qu'aussitôt après l'accident, on ait dressé, pour le constater, un procès-verbal appuyé des témoignages des gens de l'équipage, et que le capitaine du navire fasse, dans les vingt-quatre heures de son arrivée au premier port de retour ou de relâche, sa déclaration aux autorités compétentes. Celles-ci en donnent avix aux autorités consulaires de la nation du propriétaire du câble.

ARTICLE VIII.

Les tribunaux compétents pour connaître des infractions à la présente Convention sont ceux du pays auquel appartient le bâtiment à bord duquel l'infraction a été commise.

Il est, d'ailleurs, entendu que, dans les cas où la disposition insérée dans le précédent alinéa ne pourrait pas recevoir d'exécution, la répression des infractions à la présente Convention aurait lieu, dans chacun des États contractants à l'égard de ses nationaux, conformément aux règles générales de compétence pénale résultant des lois particulières de ces États ou des traités internationaux.

ARTICLE IX.

La poursuite des infractions prévues aux articles II., V. et VI. de la présente Convention aura lieu par l'État ou en son nom.

ARTICLE X.

Les infractions à la présente Convention pourront être constatées par tous les moyens de preuve admis dans la législation du pays où siège le tribunal saisi.

Lorsque les officiers commandant les bâtiments de guerre ou les bâtiments spécialement commissionés à cet effet de l'une des Hautes Parties contractantes auront lieu de croire qu'une infraction aux mesures prévues par la présente Convention a été commise par un bâtiment autre

qu'un bâtiment de guerre, ils pourront exiger du capitaine ou du patron l'exhibition des pièces officielles justifiant de la nationalité dudit bâtiment. Mention sommaire de cette exhibition sera faite immédiatement sur les pièces produites.

En outre, des procès-verbaux pourront être dressés par lesdits officiers, quelle que soit la nationalité du bâtiment inculpé. Ces procès-verbaux seront dressés suivant les formes et dans la langue en usage dans le pays auquel appartient l'officier qui les dresse; ils pourront servir de moyen de preuve dans le pays où ils seront invoqués et suivant la législation de ce pays. Les inculpés et les témoins auront le droit d'y ajouter ou d'y faire ajouter, dans leur propre langue, toutes explications qu'ils croiront utiles; ces déclarations devront être dûment signées.

Article XI.

La procédure et le jugement des infractions aux dispositions de la présente Convention ont toujours lieu aussi sommairement que les lois et règlements en vigueur le permettent.

Article XII.

Les Hautes Parties contractantes s'engagent à prendre ou à proposer à leurs législatures respectives les mesures nécessaires pour assurer l'exécution de la présente Convention, et notamment pour faire punir soit de l'emprisonnement, soit de l'amende, soit de ces deux peines, ceux qui contreviendraient aux dispositions des articles II., V. et VI.

Article XIII.

Les Hautes Parties contractantes se communiqueront les lois qui auraient déjà été rendues ou qui viendraient à l'être dans leurs États, relativement à l'objet de la présente Convention.

Article XIV.

Les États qui n'ont point pris part à la présente Convention sont admis à y adhérer, sur leur demande. Cette adhésion sera notifiée par la voie diplomatique au Gouvernement de la République française, et par celui-ci aux autres Gouvernements signataires.

Article XV.

Il est bien entendu que les stipulations de la présente Convention ne portent aucune atteinte à la liberté d'action des belligérants.

Article XVI.

La présente Convention sera mise à exécution à partir du jour dont les Hautes Parties contractantes conviendront.

Elle restera en vigueur pendant cinq années à dater de ce jour, et, dans le cas où aucune des Hautes Parties contractantes n'aurait notifié, douze mois avant l'expiration de ladite période de cinq années, son intention d'en faire cesser les effets, elle continuera à rester en vigueur une année, et ainsi de suite d'année en année.

Dans le cas où l'une des Puissances signataires dénoncerait la Convention, cette dénonciation n'aurait d'effet qu'à son égard.

ARTICLE XVII.

La présente Convention sera ratifiée; les ratifications en seront échangées à Paris, le plus tôt possible, et, au plus tard, dans le délai d'un an.

En foi de quoi, les Plénipotentiaires respectifs l'ont signée et y ont apposé leurs cachets.

Fait en vingt-six exemplaires, à Paris, le 14 mars 1884.

[SEAL.]	L. P. MORTON.	[SEAL.] HENRY VIGNAUD.
[SEAL.]	HOHENLOHE.	
[SEAL.]	M. BALCARCE.	
[SEAL.]	LADISLAS COMTE HOYOS.	
[SEAL.]	BEYENS.	[SEAL.] LÉOPOLD ORBAN.
[SEAL.]	BN. D'ITAJUBÁ.	
[SEAL.]	LÉON SOMZÉE.	
[SEAL.]	MOLTKE-HVITFELDT.	
[SEAL.]	EMANUEL DE ALMEDA.	
[SEAL.]	MANUEL SILVELA.	
[SEAL.]	JOSÉ G. TRIANA.	
[SEAL.]	JULES FERRY.	[SEAL.] AD. COCHERY.
[SEAL.]	LYONS.	
[SEAL.]	CRISANTO MEDINA.	
[SEAL.]	MAUROCORDATOS.	
[SEAL.]	MENABREA.	
[SEAL.]	ESSAD.	
[SEAL.]	BN. DE ZUYLEN DE NYEVELT.	
[SEAL.]	NAZARE-AGA.	
[SEAL.]	F. D'AZEVEDO.	
[SEAL.]	ODOBESCO.	
[SEAL.]	PRINCE ORLOFF.	
[SEAL.]	J. M. TORRES-CAÏCEDO.	
[SEAL.]	J. MARINOVITCH.	
[SEAL.]	G. SIBBERN.	
[SEAL.]	JUAN J. DIAZ.	

ARTICLE ADDITIONNEL.

Les stipulations de la Convention conclue, à la date de ce jour, pour la protection des câbles sous-marins seront applicables, conformément à l'article Ier, aux colonies et possessions de Sa Majesté Britannique, à l'exception de celles ci-après dénommées, savoir:

Le Canada;
Terre-Neuve;
Le Cap;
Natal;
La Nouvelle-Galles du Sud;
Victoria;
Queensland;
La Tasmanie;
L'Australie du Sud;
L'Australie occidentale;
La Nouvelle-Zélande.

Toutefois, les stipulations de ladite Convention seront applicables à l'une des colonies ou possessions ci-dessus indiquées, si, en leur nom, une notification à cet effet a été adressée par le Représentant de Sa

Majesté Britannique à Paris, au Ministre des Affaires étrangères de France.

Chacune des colonies ou possessions ci-dessus dénommées qui aurait adhéré à ladite Convention conserve la faculté de se retirer de la même manière que les Puissances contractantes. Dans le cas où l'une des colonies ou possessions dont il s'agit désirerait se retirer de la Convention, une notification à cet effet serait adressée par le Représentant de Sa Majesté Britannique à Paris, au Ministre des Affaires étrangères de France.

Fait en vingt-six exemplaires à Paris, le 14 mars 1884:

L. P. MORTON.
HOHENLOHE.
M. BALCARCE.
LADISLAS COMTE HOYOS.
BEYENS.
BN. D'ITAJUBÁ.
LÉON SOMZÉE.
MOLTKE-HVITFELDT.
EMANUEL DE ALMEDA.
MANUEL SILVELA.
JOSÉ G. TRIANA.
JULES FERRY.
LYONS.
CRISANTO MEDINA.
MAUROCORDATOS.
MENABREA.
ESSAD.
BN. DE ZUYLEN DE NYEVELT.
NAZARE-AGA.
F. D'AZEVEDO.
ODOBESCO.
PRINCE ORLOFF.
J. M. TORRES-CAÏCEDO.
J. MARINOVITCH.
G. SIBBERN.
JUAN J. DIAZ.

HENRY VIGNAUD.
LÉOPOLD ORBAN.
AD. COCHERY.

And of which the following is a translation thereof into the English language:

His Excellency the President of the United States of America, His Majesty the Emperor of Germany, King of Prussia, His Excellency the President of the Argentine Confederation, His Majesty the Emperor of Austria, King of Bohemia, etc., Apostolical King of Hungary, His Majesty the King of the Belgians, His Majesty the Emperor of Brazil, His Excellency the President of the Republic of Costa Rica, His Majesty the King of Denmark, His Excellency the President of the Dominican Republic, His Majesty the King of Spain, His Excellency the President of the United States of Colombia, His Excellency the President of the French Republic, Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, His Excellency the President of the Republic of Guatemala, His Majesty the King of the Hellenes, His Majesty the King of Italy, His Majesty the Emperor of the Ottomans, His Majesty the King of the Netherlands, Grand Duke of Luxemburg, His Majesty the Shah of Persia, His Majesty the King of Portugal and the Algarves, His Majesty the King of Roumania, His

Majesty the Emperor of all the Russias, His Excellency the President of the Republic of Salvador, His Majesty the King of Servia, His Majesty the King of Sweden and Norway, and His Excellency the President of the Oriental Republic of Uruguay, desiring to secure the maintenance of telegraphic communication by means of submarine cables, have resolved to conclude a convention to that end, and have appointed as their plenipotentiaries, to wit:

His Excellency the President of the United States of America, Mr. L. P. Morton, Envoy Extraordinary and Minister Plenipotentiary of the United States of America at Paris, etc., etc., etc., and Mr. Vignaud, Secretary of the Legation of the United States of America at Paris, etc., etc., etc.;

His Majesty the Emperor of Germany, King of Prussia, His Highness Prince Charles Victor von Hohenlohe-Schillingsfürst, Prince of Ratibor and Corvey, Grand Chamberlain of the Crown of Bavaria, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Excellency the President of the Argentine Confederation, M. Balcarce, Envoy Extraordinary and Minister Plenipotentiary of the Confederation at Paris, etc., etc., etc.;

His Majesty the Emperor of Austria, King of Bohemia, etc., Apostolical King of Hungary, His Excellency Count Ladislas Hoyos, Actual Privy Counselor, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Majesty the King of the Belgians, Baron Beyens, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.; and Mr. Leopold Orban, Envoy Extraordinary and Minister Plenipotentiary, Director General of Political Affairs at the Department of Foreign Affairs of Belgium, etc., etc., etc.;

His Majesty the Emperor of Brazil, Mr. d'Araujo, Baron d'Itajubá, Chargé d'Affaires of Brazil at Paris, etc., etc., etc.;

His Excellency the President of the Republic of Costa-Rica, Mr. Leon Somzée, Secretary of the Legation of Costa-Rica at Paris, etc., etc., etc.;

His Majesty the King of Denmark, Count de Moltke-Hvitfeldt, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Excellency the President of the Dominican Republic, Baron de Almeda, Envoy Extraordinary and Minister Plenipotentiary of the Dominican Republic at Paris, etc., etc., etc.;

His Majesty the King of Spain, His Excellency Manuel Silvela de le Vielleuse, permanent Senator, member of the Spanish Academy, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Excellency the President of the United States of Colombia, Doctor José G. Triana, Consul-General of the United States of Colombia at Paris, etc., etc., etc.;

His Excellency the President of the French Republic, Mr. Jules Ferry, Deputy, President of the Council, Minister of Foreign Affairs, etc., etc., etc.; and Mr. Adolphe Cochery, Deputy, Minister of Posts and Telegraphs, etc., etc., etc.;

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland, Empress of India, His Excellency the Right Honorable Richard Bikerton Pemell, Viscount Lyons, Peer of the United Kingdom of Great Britain and Ireland, member of Her British Majesty's Privy Council, Her Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Excellency the President of the Republic of Guatemala, Mr. Crisanto Medina, Envoy Extraordinary and Minister Plenipotentiary of the Republic of Guatemala at Paris, etc., etc., etc.;

His Majesty the King of the Hellenes, Prince Maurocordatos, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Majesty the King of Italy, His Excellency General Count Menabrea, Marquis de Valdora, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Majesty the Emperor of the Ottomans, His Excellency Essad Pasha, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Majesty the King of the Netherlands, Grand Duke of Luxemburg, Baron de Zuylen de Nyevelt, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Majesty the Shah of Persia, General Nazare-Aga, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Majesty the King of Portugal and the Algarves, Mr. d'Azevedo, Chargé d'Affaires of Portugal at Paris, etc., etc., etc.;

His Majesty the King of Roumania, Mr. Alexander Odobesco, Chargé d'Affaires *ad interim* of Roumania at Paris, etc., etc., etc.;

His Majesty the Emperor of all the Russias, His Excellency the Aid-de-Camp General Prince Nicholas Orloff, His Ambassador Extraordinary and Plenipotentiary near the Government of the French Republic, etc., etc., etc.;

His Majesty the King of Servia, Mr. Marinovitch, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Majesty the King of Sweden and Norway, Mr. Sibbern, His Envoy Extraordinary and Minister Plenipotentiary at Paris, etc., etc., etc.;

His Excellency the President of the Oriental Republic of Uruguay, Colonel Diaz, Envoy Extraordinary and Minister Plenipotentiary of the Republic of Uruguay at Paris, etc., etc., etc.;

Who, after having exchanged their full powers, which were found to be in good and due form, have agreed upon the following articles:

ARTICLE I.

The present Convention shall be applicable, outside of the territorial waters, to all legally established submarine cables landed in the territories, colonies, or possessions of one or more of the High Contracting Parties.

ARTICLE II.

The breaking or injury of a submarine cable, done willfully or through culpable negligence, and resulting in the total or partial interruption or embarrassment of telegraphic communication, shall be a punishable offense, but the punishment inflicted shall be no bar to a civil action for damages.

This provision shall not apply to ruptures or injuries when the parties guilty thereof have become so simply with the legitimate object of saving their lives or their vessels, after having taken all necessary precautions to avoid such ruptures or injuries.

ARTICLE III.

The High Contracting Parties agree to insist, as far as possible, when they shall authorize the landing of a submarine cable, upon suitable conditions of safety, both as regards the track of the cable and its dimensions.

ARTICLE IV.

The owner of a cable who, by the laying or repairing of that cable, shall cause the breaking or injury of another cable, shall be required to pay the cost of the repairs which such breaking or injury shall have rendered necessary, but such payment shall not bar the enforcement, if there be ground therefor, of article II. of this Convention.

ARTICLE V.

Vessels engaged in laying or repairing submarine cables must observe the rules concerning signals that have been or shall be adopted, by common consent, by the High Contracting Parties, with a view to preventing collisions at sea.

When a vessel engaged in repairing a cable carries the said signals, other vessels that see or are able to see those signals shall withdraw or keep at a distance of at least one nautical mile from such vessel, in order not to interfere with its operations.

Fishing gear and nets shall be kept at the same distance.

Nevertheless, a period of twenty-four hours at most shall be allowed to fishing vessels that perceive or are able to perceive a telegraph ship carrying the said signals, in order that they may be enabled to obey the notice thus given, and no obstacle shall be placed in the way of their operations during such period.

The operations of telegraph ships shall be finished as speedily as possible.

ARTICLE VI.

Vessels that see or are able to see buoys designed to show the position of cables when the latter are being laid, are out of order, or are broken, shall keep at a distance of one quarter of a nautical mile at least from such buoys.

Fishing nets and gear shall be kept at the same distance.

ARTICLE VII.

Owners of ships or vessels who can prove that they have sacrificed an anchor, a net, or any other implement used in fishing, in order to avoid injuring a submarine cable, shall be indemnified by the owner of the cable.

In order to be entitled to such indemnity, one must prepare, whenever possible, immediately after the accident, in proof thereof, a statement supported by the testimony of the men belonging to the crew; and the captain of the vessel must, within twenty-four hours after arriving at the first port of temporary entry, make his declaration to the competent authorities. The latter shall give notice thereof to the consular authorities of the nation to which the owner of the cable belongs.

ARTICLE VIII.

The courts competent to take cognizance of infractions of this convention shall be those of the country to which the vessel on board of which the infraction has been committed belongs.

It is, moreover, understood that, in cases in which the provision contained in the foregoing paragraph cannot be carried out, the repression

of violations of this convention shall take place, in each of the contracting States, in the case of its subjects or citizens, in accordance with the general rules of penal competence established by the special laws of those States, or by international treaties.

ARTICLE IX.

Prosecutions on account of the infractions contemplated in articles II., V. and VI. of this convention, shall be instituted by the State or in its name.

ARTICLE X.

Evidence of violations of this convention may be obtained by all methods of securing proof that are allowed by the laws of the country of the court before which a case has been brought.

When the officers commanding the vessels of war or the vessels specially commissioned for that purpose, of one of the High Contracting Parties, shall have reason to believe that an infraction of the measures provided for by this Convention has been committed by a vessel other than a vessel of war, they may require the captain or master to exhibit the official documents furnishing evidence of the nationality of the said vessel. Summary mention of such exhibition shall at once be made on the documents exhibited.

Reports may, moreover, be prepared by the said officers, whatever may be the nationality of the inculpated vessel. These reports shall be drawn up in the form and in the language in use in the country to which the officer drawing them up belongs; they may be used as evidence in the country in which they shall be invoked, and according to the laws of such country. The accused parties and the witnesses shall have the right to add or to cause to be added thereto, in their own language, any explanations that they may deem proper; these declarations shall be duly signed.

ARTICLE XI.

Proceedings and trial in cases of infractions of the provisions of this Convention shall always take place as summarily as the laws and regulations in force will permit.

ARTICLE XII.

The High Contracting Parties engage to take or to propose to their respective legislative bodies the measures necessary in order to secure the execution of this Convention, and especially in order to cause the punishment, either by fine or imprisonment, or both, of such persons as may violate the provisions of articles II., V. and VI.

ARTICLE XIII.

The High Contracting Parties shall communicate to each other such laws as may already have been or as may hereafter be enacted in their respective countries, relative to the subject of this Convention.

ARTICLE XIV.

States that have not taken part in this Convention shall be allowed to adhere thereto, on their requesting to do so. Notice of such adhesion shall be given, diplomatically, to the Government of the French Republic, and by the latter to the other signatory Governments.

ARTICLE XV.

It is understood that the stipulations of this convention shall in no wise affect the liberty of action of belligerents.

ARTICLE XVI.

This Convention shall take effect on such day as shall be agreed upon by the High Contracting Parties.

It shall remain in force for five years from that day, and, in case none of the High Contracting Parties shall have given notice, twelve months previously to the expiration of the said period of five years, of its intention to cause its effects to cease, it shall continue in force for one year, and so on from year to year.

In case one of the Signatory Powers shall give notice of its desire for the cessation of the effects of the Convention, such notice shall be effective as regards that Power only.

ARTICLE XVII.

This Convention shall be ratified; its ratifications shall be exchanged at Paris as speedily as possible, and within one year at the latest.

In testimony whereof, the respective Plenipotentiaries have signed it, and have thereunto affixed their seals.

Done in twenty-six copies, at Paris, this 14th day of March, 1884.

[L. S.]	L. P. MORTON.	[L. S.]	HENRY VIGNAUD.
[L. S.]	HOHENLOHE.		
[L. S.]	M. BALCARCE.		
[L. S.]	LADISLAS COUNT HOYOS.		
[L. S.]	BEYENS.	[L. S.]	LEOPOLD ORBAN.
[L. S.]	BN. D'ITAJUBÁ.		
[L. S.]	LÉON SOMZÉE.		
[L. S.]	MOLTKE-HVITFELDT.		
[L. S.]	EMANUEL DE ALMEDA.		
[L. S.]	MANUEL SILVELA.		
[L. S.]	JOSÉ G. TRIANA.		
[L. S.]	JULES FERRY.	[L. S.]	AD. COCHERY.
[L. S.]	LYONS.		
[L. S.]	CRISANTO MEDINA.		
[L. S.]	MAUROCORDATOS.		
[L. S.]	MENABREA.		
[L. S.]	ESSAD.		
[L. S.]	BN. DE ZUYLEN DE NYEVELT.		
[L. S.]	NAZARE-AGA.		
[L. S.]	F. D'AZEVEDO.		
[L. S.]	ODOBESCO.		
[L. S.]	PRINCE ORLOFF.		
[L. S.]	J. M. TORRES-CAÏCEDO.		
[L. S.]	J. MARINOVITCH.		
[L. S.]	G. SIBBERN.		
[L. S.]	JUAN J. DIAZ.		

ADDITIONAL ARTICLE.

The stipulations of the Convention concluded this day for the protection of submarine cables shall be applicable, according to Article I., to the colonies and possessions of Her Britannic Majesty with the exceptions of those named below, to wit:

Canada.
Newfoundland.
The Cape.
Natal.
New South Wales.
Victoria.
Queensland.
Tasmania.
South Australia.
West Australia.
New Zealand.

Nevertheless, the stipulations of the said Convention shall be applicable to one of the above-named colonies or possessions, if, in their [its?] name, a notification to that effect has been addressed by the representative of Her Britannic Majesty at Paris to the Minister of Foreign Affairs of France.

Each of the above-named Colonies or possessions that shall have adhered to the said Convention, shall have the privilege of withdrawing in the same manner as the contracting powers. In case one of the colonies or possessions in question shall desire to withdraw from the Convention, a notification to that effect shall be addressed by Her Britannic Majesty's representative at Paris to the Minister of Foreign Affairs of France.

Done in twenty-six copies at Paris, this fourteenth day of March, 1884.

L. P. MORTON. HENRY VIGNAUD.
HOHENLOHE.
M. BALCARCE.
DADISLAS COUNT HOYOS.
BEYENS. LÉOPOLD ORBAN
EN. D'ITAJUBÁ.
LÉON SOMZÉE.
MOLTKE-HVITFELDT.
EMANUEL DE ALMEDA.
MANUEL SILVELA.
JOSÉ G. TRIANA.
JULES FERRY. AD. COCHERY.
LYONS.
CRISANTO MEDINA.
MAUROCORDATOS.
MENABREA.
ESSAD.
EN. DE ZUYLEN DE NYEVELT.
NAZARE-AGA.
F. D'AZEVEDO.
ODOBESCO.
PRINCE ORLOFF.
J. M. TORRES-CAÏCEDO.
J. MARINOVITCH.
G. SIBBERN.
JUAN J. DIAZ.

And whereas the said convention has been duly ratified by the United States of America on the one hand, and by seventeen of the signatory powers on the other hand, and the respective ratifications were exchanged at Paris on the sixteenth day of April, one thousand eight hundred and eighty-five;

And whereas pursuant to Article XVI of said convention, the contracting parties have agreed upon the fifteenth day of January, one thousand eight hundred and eighty-six, as the date on which the same shall go into effect;

Now, therefore, be it known that I, Grover Cleveland, President of the United States of America, have caused the said convention to be made public, to the end that the same and every clause and article thereof may be observed and fulfilled with good faith by the United States and the citizens thereof.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the city of Washington this twenty-second day of May, in the year of our Lord one thousand eight hundred and eighty-five, and of the Independence of the United States of America the one hundred ane ninth.

[SEAL.] GROVER CLEVELAND.

By the President:

T. F. BAYARD,
Secretary of State.

No. 15.

Draught of a bill.

AN ACT to carry into effect the international convention of the fourteenth of March, eighteen hundred and eighty-four, for the protection of submarine cables.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this act shall be known as the "Submarine Cables Act of eighteen hundred and eighty-six."

SEC. 2. That the provisions of this act shall be held to apply only to cables to which the convention of the fourteenth of March, eighteen hundred and eighty-four, which is hereto annnexed and herein referred to as the convention, for the time being applies; and, subject to the provisions of this act, the provisions of the convention shall be of the same force as if they were embodied in this act, and shall be taken to be a part hereof.

SEC. 3. That any person who shall willfully break or injure, or attempt to break or injure, or who shall in any manner procure, counsel, aid, abet, or be accessory to such breaking or injury, or attempt to break or injure, a submarine cable, in such manner as to interrupt or obstruct, in whole or in part, telegraphic communication, shall be guilty of a misdemeanor, and, on conviction thereof, shall be liable to imprisonment for a term not exceeding two years, and to a fine, either in lieu of or in addition to such imprisonment, not exceeding five thousand dollars.

SEC. 4. That any person who by culpable negligence shall break or injure a submarine cable in such manner as to interrupt or obstruct in whole or in part telegraphic communication shall be guilty of a misde-

meanor, and, on conviction thereof, shall be liable to imprisonment for a term not exceeding three months, and to a fine not exceeding five hundred dollars in lieu of or in addition to such imprisonment.

SEC. 5. That the provisions of this act shall not apply to a person who breaks or injures a cable in an effort to save the life or limb of himself or of any other person, or to save his own or any other vessel: *Provided*, That he takes reasonable precautions to avoid such breaking or injury.

SEC. 6. That the provisions of the Revised Statutes from section forty-three hundred to section forty-three hundred and five, inclusive, for the trial of offenses against the navigation laws of the United States, shall extend to the trial of offenses against the provisions of articles five and six of the convention; and a person convicted of an offense against the provisions of the said articles shall be liable to a fine not exceeding five hundred dollars.

SEC. 7. That the penalties provided in this act for the breaking or injury of a submarine cable shall not be a bar to a suit for damages on account of such breaking or injury.

SEC. 8. That for the purpose of carrying into effect the convention, a person commanding a ship of war of the United States or of any foreign state for the time being bound by the convention, or a ship specially commissioned by the Government of the United States or by the Government of such foreign state, may exercise and perform the duties vested in and imposed on such officer by the convention.

SEC. 9. That when an offense against this act shall have been committted by means of a vessel, or of any boat belonging to a vessel, the master of such vessel shall, unless some other person is shown to have been in charge of and navigating such vessel or boat, be deemed to have been in charge of and navigating the same, and be liable to be punished accordingly.

SEC. 10. That any document drawn up in pursuance of article seven or article ten of the convention shall be admissible in any proceeding, civil or criminal, as prima facie evidence of the facts or matters stated therein.

SEC. 11. That unless the context of this act otherwise requires, the term "vessel" shall be taken to mean every description of vessel used in navigation, in whatever way it is propelled; the term "master" shall be taken to include every person having command or charge of a vessel; and the term "person" to include a body of persons, corporate or unincorporate.

SEC. 12. That the district courts shall have jurisdiction of all suits of a civil nature arising under this act; and from all decrees or judgments in such suits, where the matter in dispute exceeds the sum of fifty dollars, exclusive of costs, an appeal shall be allowed to the circuit court next to be held in such district, and such circuit court is required to receive, hear, and determine such appeal.

C

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 61.

INTERNATIONAL MERIDIAN CONFERENCE.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A report from the Secretary of State, recommending the Government to take action to approve the resolutions of the International Meridian Conference relating to fixing a prime meridian and a universal day.

JANUARY 9, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a report from the Secretary of State, recommending that the Government take action to approve the resolutions of the Washington International Meridian Conference, held in October, 1884, in favor of fixing a prime meridian and a universal day; and to invite the powers with whom this country has diplomatic relations to accede to the same.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, January 9, 1888.

To the PRESIDENT:

I submit herewith a copy of a communication to this Department from Rear-Admiral C. R. P. Rogers, president of the late International Meridian Conference and a delegate on behalf of the United States, recommending that the attention of Congress be called to the importance of having this Government take action with reference to the adoption of a prime meridian and a universal day.

The International Meridian Conference was held in this capital in 1884, in response to an invitation issued by the Department of State, pursuant to the act of Congress approved August 3, 1882. The official report of the proceedings and conclusions of the Conference were duly communicated to Congress, and printed as Executive Document, House of Representatives, No. 14, Forty-eighth Congress, second session.

It will be seen from that document, page 113, that the resolutions adopted by the Conference were, by the unanimous vote of the delegates, officially "communicated to the Government of the United States

of America, at whose instance the Conference has been convened." The action of the Conference renders it the obvious duty of this country to officially submit the resolutions in question to the several Governments for their consideration, at the same time making known the views of our own Government as the same may be expressed by the formal action of Congress.

This Government having convoked the Conference, and the results of its deliberations being, it is believed, entirely satisfactory to the important business interests of our country concerned, it would seem proper that Congress should, with as little delay as possible, formally approve the resolutions of the Conference in favor of fixing a prime meridian and a universal day; and at the same time authorize the President to invite all the powers with whom we have diplomatic relations to accede to the same.

Respectfully submitted.

T. F. BAYARD.

DEPARTMENT OF STATE,
Washington, January 9, 1888.

WASHINGTON CITY, D. C., *December* 7, 1887.

SIR: The act of Congress approved August 3, 1882, provided—

That the President of the United States be authorized and requested to extend to the governments of all nations in diplomatic relations with our own an invitation to appoint delegates to meet delegates from the United States in the city of Washington, at such time as he may see fit to designate, for the purpose of fixing upon a meridian proper to be employed as a common zero of longitude and standard of time-reckoning throughout the globe; and that the President be authorized to appoint delegates, not exceeding three in number, to represent the United States in such international conference.

The act approved July 7, 1884, appropriated $5,000 for the expenses of such conference, including cost of printing and translations, to be expended under the direction of the Secretary of State, and authorized the President to appoint two additional delegates on the part of the United States, five in all.

Accordingly, your predecessor, the honorable Frederick T. Frelinghuysen, addressed two circulars to the diplomatic officers, dated, respectively, October 23, 1882, and December 1, 1884. The former of these embodied the provisions of the act of August 3, 1882, and was intended to obtain the sense of the foreign government upon the subject, especially with reference to its possible acceptance of an invitation to participate in an international conference at a date to be designated by the President in the near future. The latter formally invited the several foreign governments to be represented by one or more delegates (not exceeding three) in such conference, to be convened at Washington October 1, 1884, for the purpose of discussing and, if possible, fixing upon a meridian proper to be employed as a common zero of longitude and standard of time-reckoning throughout the globe.

In response to such invitation the following countries were duly represented: Austria-Hungary, Brazil, Chili, Colombia, Costa Rica, Denmark, France, Germany, Great Britain, Guatemala, Hawaii, Italy, Japan, Liberia, Mexico, Netherlands, Paraguay, Russia, San Domingo, Salvador, Spain, Sweden, Switzerland, Turkey, United States, and Venezuela.

The conference began its sessions October 1, and adjourned *sine die* November 1, 1884. The discussions covered a wide and varied field,

both from an international point of view and a political stand-point, as regards the common interests of mankind. It is not my present purpose to do more than to briefly refer to the object of the conference and to cite as the results of its labors after a full, frank, and patient interchange of opinion, the following resolutions, which were adopted:

I.

That it is the opinion of this Congress that it is desirable to adopt a single prime meridian for all nations in place of the multiplicity of initial meridians which now exist.

II.

That the conference proposes to the Governments here represented the adoption of the meridian passing through the center of the transit instrument at the Observatory of Greenwich as the initial meridian for longitude.

III.

That from this meridian longitude shall be counted in two directions up to 180 degrees, east longitude being plus and west longitude minus.

IV.

That the conference proposes the adoption of a universal day for all purposes for which it may be found convenient, and which shall not interfere with the use of local or other standard time where desirable.

V.

That this universal day is to be a mean solar day; is to begin for all the world at the moment of mean midnight of the initial meridian, coinciding with the beginning of the civil day and date of that meridian; and is to be counted from zero up to twenty-four hours.

VI.

That the conference expresses the hope that as soon as may be practicable the astronomical and nautical days will be arranged everywhere to begin at mean midnight.

VII.

That the conference expresses the hope that the technical studies designed to regulate and extend the application of the decimal system to the division of angular space and of time shall be resumed, so as to permit the extension of this application to all cases in which it presents real advantages.

And it was further unanimously adopted:

That a copy of the resolutions passed by the conference shall be communicated to the Government of the United States of America, at whose instance and within whose territory the conference has been convened.

Accordingly, on the 4th of December, 1884, the President (see House Executive Document, No. 14, 48th Congress, 2d session) transmitted to that body the text of the International Meridian Conference held pursuant to the act of August 3, 1882, and for a more detailed account of its deliberations, I respectfully invite attention to that document.

February 7, 1885, a concurrent resolution, reported by Senator Miller, chairman of the Committee on Foreign Relations, provided that the President be authorized and requested to communicate to the governments of all nations in diplomatic relations with the United States the resolutions adopted by that conference for the purpose of fixing a prime

meridian and a universal day, and to invite their accession to the same. And on February 9 this resolution was considered, by unanimous consent, in the Senate and agreed to.

But the proposed action of the Senate failed of completion through want of proper action in the House of Representatives, and up to the present time Congress has done nothing to further the results of the conference. Since, however, it was conceded that, as the United States possessed the greatest longitudinal extension of any country traversed by railway and telegraph lines, this Government should take the initiatory measures for holding an international conference to consider so important a subject, and since, further, the conference itself recommitted the resolutions adopted by it to the Government of the United States, it may naturally be supposed that the other governments interested in the question will defer action in respect of the recommendations of the conference until they are advised of their final determination by the United States. My own opinion is that the results of the conference are far too important and far reaching to mankind everywhere, especially those who follow the sea, to permit them to be now lost sight of for the lack of definite action by the Congress of the United States.

The establishment of a prime meridian [as was well said by Mr. W. F. Allen, secretary of the Railway Time Convention and a United States delegate] has, from force of circumstances, become of practical importance to certain interests intrusted with vast responsibilities for the safety of life and property. These interests bear an important relation to the commerce of the world * * *. Exactness of time-reckoning is an imperative necessity in the conduct of business.

It was a generally accepted and understood principle, and I am sure the protocols and proceedings of the conference will bear out my assertion, that whatever results were agreed upon by the conference, they should have no binding force upon any of the governments represented unless finally acceded to by them. In this contingency, therefore, it appears of the first importance that an expression of opinion by this Government should be recorded, and that in the absence of a better general accord on the subject the resolutions of the conference should be adopted by Congress and the President authorized to so communicate to the governments in interest, asking their accession thereto, as proposed by Senator Miller.

I, therefore, respectfully suggest to you the propriety of your recommending to the President that he call the attention of Congress to this important matter.

While the deliberations of the conference are no doubt familiar to you, I feel sure that you are no less interested than myself in the establishment of an international prime meridian, from which great benefits to the whole world may be expected to flow, and that you will pardon the apparently unusual length to which I have gone in this communication, but which, in view of the importance of the subject, as I understood it, and the interests affected, I could not well record in less space.

I have the honor to be, sir, your obedient servant,

C. R. P. RODGERS,
Rear-Admiral, U. S. N.
President of the late International Meridian Conference, and a Delegate on behalf of the United States.

Hon. THOMAS F. BAYARD,
Secretary of State.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 62.

SECURITY OF LIFE AND PROPERTY AT SEA.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A communication from the Secretary of State, relating to a convocation of a national conference, at Washington, of representatives of all maritime nations to devise measures for the greater security of life and property at sea.

JANUARY 9, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a communication from the Secretary of State relative to the requests which have been received from various maritime associations and chambers of commerce of this country, asking that measures be taken to convoke an international conference, at Washington, of representatives of all maritime nations, to devise measures for the greater security of life and property at sea. I commend this important subject to the favorable consideration of Congress.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, January 9, 1888.

The PRESIDENT:

I transmit herewith copies of memorials which have been received by this Department from various maritime associations and chambers of commerce throughout the country, asking that the attention of Congress be called to the importance of inviting an international conference of the maritime nations of the world to devise measures for the greater security of life and property at sea.

Among the important subjects which it is proposed to submit for the consideration of the conference are the revision of the international regulations for preventing collisions at sea, the improvement of the Life-Saving Service, the establishment of uniform load-line regulations, and naval aids to merchant marine.

As nearly all the maritime associations and chambers of commerce in the United States have joined in bringing the subject to the attention of this Department, I have the honor, in view of the important bearing

which the proposed measures have on the security of life and property at sea, to recommend that the accompanying papers be laid before Congress, and that the subject be commended to the favorable consideration of that body.

Respectfully submitted. T. F. BAYARD.

DEPARTMENT OF STATE,
Washington, January 9, 1888.

No. 1.

DEPARTMENT OF STATE,
Washington, October 25, 1887.

SIR: Your letter of the 15th instant, addressed to the President, relative to the action taken by the Philadelphia Maritime Exchange in requesting the Executive to call an international conference of the maritime nations of the world to devise and recommend measures for the better security of life and property on the high seas, has been referred to this Department.

The subject is one of great moment which, in one form or another, has had the attention of this Department for years. The suggested international conference could not, however, be convoked without authority and provision on the part of Congress to meet the necessary expenses. The matter will be put in shape for presentation by the President to Congress at its approaching session. Meanwhile, a carefully-prepared memorial, signed by the principal chamber of commerce and other like bodies in this country, would be a convenient method of presenting the matter for the consideration and action of Congress.

Adding that the Department would be pleased to be put in possession of any pamphlets, printed addresses, and other documents relating to the subject in question which may be at the disposal of yourself and other friends of the proposed measure,

I am, sir, your obedient servant,

T. F. BAYARD.

WILLIAM BROCKIE, Esq.,
President of the Maritime Exchange, Philadelphia, Pa.

No. 2.

DEPARTMENT OF STATE,
Washington, November 10, 1887.

SIR: I have to acknowledge the receipt of your letter of 24th September last, communicating to the President the recommendation of your association that the United States invite a conference of representatives of all maritime nations to concert measures for the greater security of life and property at sea.

It is the intention of the Executive to bring this subject to the attention of Congress at an early date.

I am, sir, your obedient servant,

T. F. BAYARD.

JOHN P. TOWNSEND, Esq.,
President of the Maritime Association of the Port of New York, New York City.

No. 3.

MARITIME ASSOCIATION OF THE PORT OF NEW YORK,
New York, November 16, 1887.

DEAR SIR: I have the honor to acknowledge the receipt of your favor of the 10th instant, which informed us that President Cleveland would communicate to Congress the proposition for an international marine conference, which I had the honor to suggest to him on the 24th September.

Understanding that you will put the matter in form for presentation to Congress, I feel some delicacy in making suggestions upon the subject, but I trust you will excuse me for venturing to inclose certain points which it seems to me should be embraced in the bill to be presented. I do this the more freely knowing that in foreign countries—in Great Britain at least—there is a peculiar sensitiveness among the shipping community as to their Government restricting their freedom of action in what they think is essential to their interests.

I think the bill as I have sketched it will, on review, meet your approval and general commendation. If the scope of the conference should be made so broad as to include points not strictly affecting the security of life and property at sea, I beg to suggest whether, in your opinion, some foreign powers may not hesitate to join in the conference.

I trust that you will pardon the suggestion, which is made solely in the interest of our commerce, and with a view to securing entire harmony of action here and abroad.

I take the liberty to send herewith copies of indorsements received from various commercial organizations. They were asked, largely with a view to securing full assurance that the necessity for the conference was generally recognized.

I have the honor to remain, very respectfully, yours,

JOHN P. TOWNSEND,
President.

Hon. T. F. BAYARD,
Secretary of State.

Suggestion for a bill to provide for an international marine conference, and to make provision therefor.

SECTION 1. *Be it enacted,* That the President of the United States be, and he hereby is, authorized and directed to invite the government of each maritime nation to send five delegates to a marine conference that shall assemble in the city of Washington on the fourth day of July, in the year one thousand eight hundred and eighty-eight, or at such other time and place as he may designate, and to appoint five delegates to represent the United States at said marine conference and to fill vacancies in their number.

SEC. 2. It shall be the object of said marine conference to revise and amend the "Rule of the road at sea" and the "international code" of flag and night signals; to adopt a marine signal or other means of plainly indicating the direction in which vessels are moving in fog, mist, falling snow, and thick weather, and at night; to compare and discuss the various systems employed for the saving of life and property from shipwreck; for reporting, marking, and removing dangerous wrecks and obstructions to navigation; for designating vessels for conveying to mariners and shipping warnings of approaching storms, of dangers to navigation, of changes in lights, buoys, and other day and night marks, and other important information; and to formulate and submit for ratification to the governments of all maritime nations proper international regulations for the prevention of collisions and other avoidable marine disasters.

SEC. 3. *The sum of* ——— *dollars is* hereby appropriated out of any funds in the *Treasury of the United States* not otherwise appropriated for the necessary ex-

penses of said marine conference, including the pay and allowances of the representatives of the United States therein, who shall receive the same pay and allowances as members of Congress.

THE MARITIME ASSOCIATION OF THE PORT OF NEW YORK,
New York, September 24, 1887.

SIR: We respectfully recommend that the United States invite a conference of representatives of all maritime nations to concert measures for the greater security of life and property at sea.

The inadequacy of the present international regulations is universally recognized. Fatal collisions too often occur, owing to the increased number, size, and speed of steam-ships. Many such accidents would be averted were steamers required to indicate in fogs, not merely their presence, as at present, but their direction.

This can be arranged only through international conference, as each vessel is governed only by the laws of her country.

The number of lives as well as the value of the property imperiled from this cause alone would warrant the calling of the conference. But there are other points of great maritime importance to all which the proposed body could properly consider. This recommendation is made only after the most careful consideration; and, from the many evidences of your high regard for the interest of commerce, we feel assured of your effective action in the matter.

With great respect,

JOHN P. TOWNSEND,
President.

GROVER CLEVELAND,
President of the United States.

BOSTON CHAMBER OF COMMERCE,
Boston, October 27, 1887.

DEAR SIR: We are in receipt of reply to our memorial to the President of the United States in reference to an international conference, as proposed by your body some time ago. I am instructed by our board of directors to prepare, at suggestion of the Secretary of State, through whose Department reply was made, a memorial to Congress. Such a document should be very carefully prepared, and as your exchange took the initiative in the matter I shall be glad to receive any suggestions you may have to make in the preparation of an able document. I presume you have had a similar response to your memorial.

Awaiting your reply, I remain,

Very respectfully, yours,

W. H. PEARSON,
Secretary.

F. W. HOUGHTON,
Superintendent Maritime Exchange of the Port of New York, New York City.

MERCHANTS' EXCHANGE AND BOARD OF TRADE,
Portland, Me., November 5, 1887.

DEAR SIR: Referring to yours of October 10, 1887, I have the honor to inform you that at a meeting of this board, held on the 3d instant, it was unanimously voted that this board fully indorses the measures set forth in the communication of the Maritime Association of New York in behalf of requesting the President of the United States to invite a conference of representatives of all maritime nations to concert measures for greater security of life and property at sea, etc.

I have also caused the action of this board thereon to be published in all the daily papers of this city.

Very respectfully,

M. N. RICH,
Secretary.

F. W. HOUGHTON,
Superintendent, etc.

NAVY DEPARTMENT,
Washington, November 8, 1887.

SIR: I have the honor to acknowledge the receipt of your letter of the 5th instant, in which you request the co-operation of this Department in the application to Con-

gress for a conference of all maritime nations to formulate a code of international regulations for the greater security of life and property at sea, and to state that the Department will assist in the matter.

Very respectfully,

D. B. HARMONY,
Acting Secretary of the Navy.

JOHN P. TOWNSEND, Esq.,
Maritime Association of New York, Post-Office Station P, New York City.

TREASURY DEPARTMENT, BUREAU OF NAVIGATION,
Washington, D. C., October 15, 1887.

SIR: This office is in receipt of your letter of the 12th instant, and, in reply, has to state that the movement for a convention or conference of maritime nations, to consider the causes of preventable marine disasters and to secure greater safety of life and property at sea, will receive the hearty co-operation of this Bureau.

Respectfully, yours,

C. B. MORTON,
Commissioner.

F. W. HOUGHTON, Esq.,
No. 40 *Exchange Building, Beaver Street, New York City.*

SIGNAL OFFICE, WAR DEPARTMENT,
Washington City, November 4, 1887.

DEAR SIR: Referring to your letter of October 31, with reference to a conference of representatives of all maritime nations to adopt measures for the greater security of life and property at sea, I have the honor to say that this office will take pleasure in co-operating to its fullest extent in furthering the wishes of your association in this respect, and will be pleased to take into consideration the question of international code of flag signals, with reference to its being revised or supplemented, as may seem most desirable.

Whenever you may deem the time a proper one, active measures will be taken towards an examination and revision of the code in question.

I am, very respectfully, your obedient servant,

A. W. GREELEY,
Chief Signal Officer.

Mr. F. W. HOUGHTON,
Superintendent Maritime Association, Port of New York, New York City.

OFFICE OF THE BOARD OF TRADE, MERCANTILE LIBRARY BUILDING,
Philadelphia, September 30, 1887.

DEAR SIR: It is understood that your association has addressed the National Government, soliciting its aid in securing an international conference to consider subjects directly affecting the interests of all maritime nations.

This Board of Trade has always been deeply interested in all matters concerning our merchant marine, or the laws in relation thereto, and would be pleased to join in any movement looking towards securing greater security of life and property at sea.

Trusting that your efforts may prove successful, and that this board may be able to aid your association,

I have the honor to subscribe myself, yours, truly,

W. R. TOWNSEND,
Secretary.

F. W. HOUGHTON, Esq.,
Superintendent Maritime Association, Port of New York, New York City.

MERCHANTS' EXCHANGE,
Baltimore, October 12, 1887.

DEAR SIR: In answer to yours of yesterday, I reply the matter has been mentioned by the daily press of our city, and I have, on behalf of this exchange, addressed a letter to the President of the United States, uniting with your request to him to call a conference, etc.

Yours, very truly,

M. L. DUDLEY.

Mr. F. W. HOUGHTON,
Secretary Maritime Association, Beaver and New Streets, New York City.

CHAMBER OF COMMERCE,
Wilmington, N. C., October 21, 1887.

At a meeting of the executive council of this chamber, held this day, the following action was taken:

[Extract.]

Resolved, That this chamber approves of and indorses the movement inaugurated by the Maritime Association of the Port of New York, looking to a conference of representatives of all maritime countries to concert measures for the greater security of life and property at sea.

A true copy, attest:

JNO. S. CANTWELL,
Secretary.

FRANCIS W. HOUGHTON, Esq.,
Superintendent Maritime Association, New York, City.

THE CHARLESTON EXCHANGE,
Charleston, S. C., October 15, 1887.

DEAR SIR: Your letter of 10th instant, with newspaper clippings, was duly received. The letter has been referred to our marine committee.

Yours, truly,

R. A. TAVEL,
Superintendent.

F. W. HOUGHTON,
Superintendent Maritime Association.

THE SAVANNAH COTTON EXCHANGE,
Savannah, Ga., October 20, 1887.

DEAR SIR: Your favor, 10th instant, with inclosure, was read at a meeting of the board of directors held this day. The board direct me to reply that the efforts of your association, looking to the greater security of life and property at sea, has its hearty indorsement, and this exchange will gladly aid in bringing about this much-to-be-desired result.

Very respectfully,

E. F. BRYAN,
Superintendent.

F. W. HOUGHTON, Esq.,
Superintendent, New York City.

JACKSONVILLE BOARD OF TRADE,
Jacksonville, Fla., October 21, 1887.

DEAR SIR: At a recent meeting of this board I had the honor to lay before them your communication respecting a conference of international representatives to consider, among other things, the "rule of road at sea." On motion the action of your body in asking the President to convene such conference was indorsed by unanimous vote, and the city and State newspapers urged to give the matter all the prominence in their power.

I am, very truly, yours,

JAMES M. FAIRLIE,
Secretary.

The SECRETARY OF THE MARITIME ASSOCIATION OF THE PORT OF NEW YORK,
New York City.

CHAMBER OF COMMERCE,
New Orleans, October 14, 1887.

DEAR SIR: Your interesting favor of October 10 was duly received this a. m. Its contents merit careful attention, which it shall receive.

As you have, doubtless, sent a similar letter to the New Orleans Maritime Association, and as the president of that association, Capt. A. K. Miller, is a prominent member of this Chamber of Commerce, I shall address him upon the subject, and it is likely that at the next session of this chamber a communication on this subject will be read.

Prior to that the monthly Journal of Commerce of this chamber will be issued, say November 1, and the writer will publish the extract from the Maritime Register inclosed by you, unless you prefer to write something under your own signature for said journal, of which I shall be glad for you to avail yourself when it can serve you in this good cause.

Very respectfully, yours truly,

D. L. MITCHEL,
Secretary.

F. W. HOUGHTON,
Superintendent Maritime Association of the Port of New York,
Produce Exchange Building, Beaver Street, Station P, New York City.

CHAMBER OF COMMERCE,
Duluth, Minn., October 19, 1887.

DEAR SIR: Your communication of October 10, soliciting the support and co-operation of this Chamber in behalf of a conference of the representatives of all maritime nations to concert for the greater security of life and property at sea, is received, and was laid before the Chamber at its regular meeting last evening. The subject is one of great importance and has been already agitated to some extent at this port. The necessity of a revision of the "rule of the road at sea" is apparent here on the Great Lakes, where fogs are so common and where the tonnage is increasing so rapidly. We are now running great ocean steamers on the upper lakes, and the number increasing beyond all former precedent renders the danger of collision and other accidents more and more imminent.

Your association can feel assured of the sympathy and support of this Chamber in any effort to diminish the hazards of navigation.

Should the President decide to invite a conference as proposed, please inform us and we will endeavor to be represented therein.

If you think of any steps that we can take to further assist in bringing about so desirable a consummation and the abridgment of the dangers of navigation, please advise us.

With great respect, very truly,

WILLIAM F. PHILPS,
Secretary.

F. W. HOUGHTON, Esq.,
Superintendent Maritime Association of the Port of New York, City of New York.

BUFFALO MERCHANTS' EXCHANGE,
Buffalo, N. Y., October 20, 1887.

DEAR SIR: I have to acknowledge the receipt of your communication and inclosure of October 10, and have shown them to President Smith.

Will take an opportunity of bringing them to the notice of parties interested at the earliest moment.

With compliments, yours, faithfully,

WM. THURSTONE,
Secretary.

F. W. HOUGHTON, Esq.,
Superintendent Maritime Association, New York City.

DETROIT BOARD OF TRADE,
Detroit, Mich., October 12, 1887.

DEAR SIR: Your communication of the 10th instant, requesting the indorsement of this association in favor of a conference of representatives of all maritime nations for stated purpose, was received this date and laid before the directors.

I was instructed by the board to acknowledge the receipt of the letter, and to give assurances of hearty sympathy and support in behalf of any such measure as set forth in the communication. It will also be referred to members of the association who are especially interested in maritime enterprise.

Respectfully, yours,

GEO. M. LANE,
Secretary.

Mr. F. W. HOUGHTON,
Superintendent Maritime Association, New York City.

Superintendent Maritime Exchange, New York.

THE BALTIMORE CORN AND FLOUR EXCHANGE,
Baltimore, November 15, 1887.

DEAR SIR: Your communication, October 10, duly received. Regarding a conf ence of representatives of all maritime nations to concert measures for the grea security of life and property at sea, this exchange will be glad to co-operate wi your body.

Very respectfully,

WM. F. WHEATLEY,
Secretary.

Mr. F. W. HOUGHTON,
Superintendent Maritime Association, New York City.

THE MARITIME ASSOCIATION OF THE PORT OF NEW YORK,
New York, October 10, 1887.

DEAR SIRS: We have requested the President of the United States to invite a co ference of representatives of all maritime nations to concert measures for the great security of life and property at sea. We would be glad to have your body indor the movement and enlist the support of the press. Among the subjects for consi eration by the conference we would suggest, first, a revision of the "rule of the ro at sea" to lessen danger of collision by a signal indicating the course being steere particularly by steamers, during fogs; also action with regard to floating wreck removal of wrecks sunk on soundings, not only in harbors but on coasts outside n tional limits, improvement of International Signal Code, to secure greater celerity signaling, aids to navigation, similar to or an improvement upon our Hydrograph Offices, Life-Saving Service, etc.

Trusting to have your effective support in the matter,

I remain, very respectfully, yours,

F. W. HOUGHTON,
President.

MERCHANTS' EXCHANGE,
Saint Louis.

Approved and indorsed by the board of directors of th e Merchants' Exchange Saint Louis, November 14, 1887.

Commercial Exchange, Mr. William R. Tucker.
Drug Exchange, Dr. Adolph W. Miller.
Vessel Owners' and Captains' Association, Henry R. Edmunds, esq.

Hon. Charles O'Neill, Capt. George B. White, U. S. Navy, and Francis W. Houghton, esq., superintendent of the Maritime Association of New York, were also present by invitation.

The chairman, after calling the meeting to order, explained that the object of the meeting was to take steps to prepare a joint memorial to Congress, petitioning for such legislation as may be necessary to authorize the President of the United States to convoke an international conference of the maritime powers of the world to consider subjects affecting the security of life and property on the high seas, and the increase of aids to navigation.

Mr. Houghton, of the New York Maritime Association, explained fully the action of that association regarding the proposed international conference, which it most earnestly favored; also what was proposed to be done in the near future.

Hon. Charles O'Neill expressed a deep interest in the movement, and advised the immediate preparation of a strong memorial to Congress, setting forth the purposes of and the necessity for the desired conference.

Capt. George B. White, U. S. Navy, favored the meeting with his views on the subject, dwelling on the great importance of early action, and explaining some of the dangers threatening our shipping interests by reason of much needed modifications in the international rules and regulations governing the use of the ocean as a great neutral highway.

On motion of Mr. Frank L. Neall it was

Resolved, That a committee shall be appointed by the chairman to consider and prepare a joint memorial to Congress, and with it to submit to a further joint meeting of the representatives of the exchange suggestions as to the proper course to adopt to secure the desired Congressional legislation.

The chair appointed the following committee: Mr. Frank L. Neall, the Maritime Exchange; Mr. Andrew Wheeler, the Board of Trade; Henry R. Edmunds, esq., the Vessel Owners' and Captains' Association; Dr. Adolph W. Miller, the Drug Exchange; Mr. William R. Tucker, the Commercial Exchange.

[Extract from finding of the naval court held at Her Britannic Majesty's consulate-general at New York, June 7 and 8, 1887, to investigate the Celtic-Britannic collision.]

The court, in conclusion, desires to express its opinion that the signals of steamships at the present time are not sufficiently distinctive.

In this case the Britannic could only have given the same signal to port, as the standing signal in fog is ——

The court also thinks there should be a separate shrill whistle on the bridge, under the control of the officer in charge, to indicate to any approaching vessel the way he is putting his helm.

W. R. HOARE,
Her Majesty's Acting Consul-General, President.
WM. MCMICKAN,
Master Steam-ship Umbria.
F. ARCHER,
Master of Steam-ship Tower Hill.
JOHN B. PURVIS,
Master of Steam-ship Metapedia.

BALTIMORE BOARD OF TRADE,
Baltimore, November 11, 1887.

DEAR SIR: Your favor of October 10 was duly received and presented to the Baltimore Board of Trade at the monthly meeting, had November 7, and referred to the committee on coastwise commerce. I am directed to say that the board feels a deep interest in the subject of your communication, and will doubtless take steps to cooperate with your association in the matter.

With much respect, sincerely yours,

CHARLES T. CRANE,
Secretary.

F. W. HOUGHTON, Esq.,
Superintendent Maritime Association, New York City.

[From the New York Herald of October 16, 1887.]

Rule of the road.—An international congress proposed for improving signals at sea.—Naval aids to the merchant marine.—How the usefulness of the Life-Saving Service may be increased.

Among the desiderata of the times is a marine signal to diminish the chances of collision by indicating the course being steered by vessels during fogs. It is particularly important because of the large passenger traffic by steam-ships, which have increased enormously in size and speed, as well as numbers, of late years. The London Board of Trade has recently issued the following caution:

The Board of Trade desires to call the attention of ship-owners and ship-masters to the wording of article 19 of the regulations for preventing collisions at sea:

"ARTICLE 19.—In taking any course authorized or required by these regulations a steam-ship under way may indicate that course to any ship which she has in sight by the following signals on her steam-whistle, viz:

"One short blast to mean, 'I am directing my course to starboard;' two short blasts to mean, 'I am directing my course to port;' three short blasts to mean, 'I am going full speed astern.'"

The use of those signals is optional, but if they are used the course of the ship must be in accordance with the signal made.

By which it will be seen that these signals were never intended to be used during fog, but only in cases in which a steam-ship has another vessel in sight.

This case shows the great imprudence and danger of altering the course of a vessel to avoid another vessel which is not in sight and whose position it is impossible correctly to determine.

The Maritime Register well says, "This warning shows in the strongest manner the necessity of adopting, at the earliest possible moment, a system of signaling—the simpler the better—that will indicate the position of vessels moving through a fog."

INADEQUACY OF THE PRESENT INTERNATIONAL CODE.

The present code of signals is exceedingly crude. One blast of the steam-whistle signifies an intention to pass to the right and two to the left. For fogs and thick weather there is provided only one signal, a prolonged blast at intervals of not over two minutes.

This is clearly inadequate. Imagine a steam-ship at sea breasting a strong northerly gale, the air opaque with driving snow, which deadens every sound but the noise of the waves and the howling of the wind through the rigging. The shrillest shriek of the whistle could not be heard by a vessel, half a mile distant, coming down before the gale directly in the steamer's course. Assuming that the united speed of the two ships is 30 miles per hour, one minute will suffice to close up the half-mile gap between them and bring them together.

But even if heard the sound would indicate only the presence of the steamer without giving any intimation of her direction. It would be a manifest improvement if she were required to make some pre-arranged signal which would plainly announce to all within hearing not merely her nearness, but how she is steering. Such a signal must be so simple and readily understood that its exact significance may be instantly intelligible to the comprehension of the most ignorant, otherwise it may only serve to confuse and mislead at the instant when prompt and decisive action may be necessary to avert a collision.

By the recognized "rule of the road at sea" the steamer must be kept out of the way of sailing vessels. Should any be near they would gladly aid her in this duty by giving her a wide berth on hearing her signal. But they can only conjecture in what direction she is heading. It is pure guess on their part. The officer on the bridge of the steamer has a slight advantage if he happen to hear the signal of the sailing vessel, for recognizing by her fog-horn that a sailing vessel is near, he can judge from the direction of the wind, if there be any, something of her movements. If there be no wind he is as much befogged as the skipper of the ship which lies helpless, it may be, directly in the steamer's path.

The law provides that vessels under sail in thick weather shall sound the fog-horn once if on the starboard tack, twice if on the port tack, and give three blasts if sailing with the wind abaft the beam. One or two blasts would indicate to a seaman hearing it quite nearly how she was heading, but the three blasts would only serve to confound. It is the only signal provided by the present regulations for fifteen points, or nearly half the entire compass. It covers points almost diametrically opposite, and judgment as to its intent in an emergency might be as far from the truth as the east is from the west.

PROPOSITION FOR AN INTERNATIONAL CONFERENCE.

A committee of practical men has been appointed by the Maritime Exchange to consider the subject and devise a remedy. Upon their recommendation it is proposed to ask the President of the United States to request all maritime nations to unite in a conference upon this and other matters affecting the commerce of the world.

The plan is to be commended as the best practical course. The ocean, covering three-fourths of the globe, is a neutral region free to all. Each ship upon it is governed only by the laws of the country whose flag she carries. An international conference, such as is proposed, could hardly fail to result in the adoption of kindred laws and regulations for the security of life and property at sea, and would tend to bring closer together the nations of the earth.

There are many important matters other than the "rule of the road" which the proposed congress might act upon for the common good. Among these are the so-called "international code" of flag signals. Circumstances have changed materially since they were adopted by Great Britain in 1856. Steam was then in its infancy, and a 20-knot steamer was unknown. A rearrangement is necessary to insure celerity in communicating. The "ocean greyhounds" of to-day meeting at sea have scarcely time to make and answer signals before they are out of signaling distance astern. The flags used should also be simplified to prevent their being misread, which is done, as we have occasion to note, almost daily. Moreover, the code requires the addition of many geographical names in common use to-day, but unknown thirty years ago.

NAVAL AIDS TO THE MERCHANT MARINE.

Naval aids to the merchant service is another important matter for consideration. Our Government has adopted the wise policy of employing its naval officers in time of peace for the benefit of the commercial marine. Branch hydrographic offices, located at the maritime exchanges of leading sea-ports, freely give to masters of vessels and other inquirers the latest information in possession of the Government concerning foreign waters, lights, dangers to navigation, etc. Men-of-war and revenue-cutters cruise for the relief of distressed vessels during the stormy season. They are also ready to search for and destroy any wreck or obstruction to navigation deemed especially dangerous. If other nations would do the same it would be for the benefit of our vessels trading with foreign ports.

THE LIFE-SAVING SERVICE.

The same remark applies to our life-saving service. We have probably the most efficient service in the world, and yet lives have been lost upon our coast because shipwrecked foreigners have misunderstood our methods. If the best of all systems were adopted generally by maritime nations, life and property that would be lost otherwise would be saved, not only on our own but on foreign shores. As our ships go everywhere and our people roam over the whole earth, this interests us not less than those nations whose laws the conference would probably modify.

FLOATING WRECKS ON THE OCEAN.

The dangers attending floating wrecks are also important to consider. How many vessels and precious lives have been lost through this medium can never be known. To lessen this peril a system might be adopted by which such obstructions should be reported and in extreme cases destroyed, with due reference to interest of owners.

No doubt other interesting points would be considered by the proposed international conference. Of course it could only digest and recommend, subject to ratification by the governments represented. With such safeguards it is scarcely possible that any final action could be generally taken that would encroach upon private rights or be otherwise than for the best interests of all. And even if the recommendations of the conference be only partially adopted, it will aid partially, at least, in protecting the lives and property of our citizens exposed to the dangers of the seas throughout the world. There can be no doubt that ship-owners and seamen will say, by all means let the conference be held.

[From the New York World, September 15, 1887.]

At the regular monthly meeting of the Maritime Exchange yesterday a resolution was passed in the interests of life and property at sea. It is proposed to request President Cleveland to invite representatives from all maritime nations to meet in convention for the purpose of establishing a more comprehensive and uniform code of fog-signals than is now in use. The present great objection arises from the fact

that whistles or fog-horns in most instances merely indicate the proximity of vessels without showing their course. This is important when it is considered that a steamer, while sounding her whistle for two minutes, which is the rule, keeps her motion with dangerous force even under reduced speed.

A number of maritime experts, including ex-naval officers and prominent sea captains, were present and heartily indorsed the measure, and were confident of its feasibility. Suggestions on the subject from practical persons will receive careful attention before the delegation appointed to wait upon the President proceeds to Washington.

[From the New York Daily Commercial Bulletin, October 6, 1887.]

The movement which has been started at the Maritime Exchange here in favor of an international maritime convention for the purpose of improving our present defective system of fog-signals at sea, deserves to be pushed. It commends itself to the underwriters not less than to merchants and the traveling community, and no difficulty hence should be experienced in creating a public opinion in its favor sufficiently imperative to assure its success. * * * * * * *

Several other interesting and important points for discussion and action are scheduled by the Maritime Exchange, to be brought forward at the anticipated congress. Among them may be mentioned the international code of flag-signals, which needs revision, as circumstances have materially changed since its adoption in 1856, when steam had just appeared upon the threshold of commerce and a really fast steamer was unknown and unanticipated. Celerity in communication is the reform that is needed in this department of the signal service, together with the addition of recent geographical names, etc., of a nature belonging to recent developments. Floating wrecks, naval aids to commerce in the establishment of hydrographic offices, the life-saving service and other points of equal interest will be considered by the martime conference under discussion. Its province, as a matter of course, would only be to investigate, digest, and recommend, subject to the individual action of the represented governments. Nevertheless, it is only fair to suppose that under the above conditions of internal supervision no action could be taken which would encroach upon private rights or accomplish other than the maritime welfare of all.

[From the New York Journal of Commerce, November 1, 1887.]

The "Pilot Chart of the North Atlantic Ocean" for November, just published by the United States Hydrographic Office, is especially interesting at the present time in view of the request made recently by the New York Maritime Association that President Cleveland call

AN INTERNATIONAL CONFERENCE

to consider thoroughly such matters relating to the safety of navigation on the high seas as can only become effective through the hearty co-operation of the principal maritime nations of the world. While the most important considerations would perhaps be those relating to agreement as to fog signals, running lights, and rules of the road, yet the question of clearing the sea of

DANGEROUS DERELICTS

which are a constant menace to commerce is also of great importance. A review of back numbers of the "Pilot Chart" shows that the following numbers of such dangerous obstructions have been reported this year: June, 31; February, 24; March, 22; April, 21; May, 22; June, 24; July, 25; August, 30; September, 30; October, 23, and on the November chart there are 43 derelicts.

[From the New York Maritime Register, October 26, 1887.]

The Philadelphia Maritime Exchange, we are glad to see, has addressed a letter to the President, calling attention to the importance of having a conference of the representatives of all maritime nations to discuss and recommend measures for the better security of life and property on the high seas. As the Maritime Register has for years pointed out, the necessity of some action in this direction becomes stronger with the increase of shipping, and now that the several commercial exchanges are urging the matter upon the attention of the Government it is certain that some movement toward the end desired will be started.

[From the New York Insurance Monitor for November, 1887.]

No class of men, not even the vessel-owners themselves, have so large a pecuniary interest in whatever tends to give additional security to property afloat on the high seas as the marine underwriters. The apathy of owners and shippers on the subject

must indeed be charged to insurance which relieves them of the risk which they would otherwise be compelled personally to assume. In all such movements therefore underwriters should be found at the front. The conditions of ocean navigation have undergone a complete revolution since the existing rules of the road were adopted by the maritime powers. It is no longer a question of ships propelled by wind or even of slow steamers meeting on the wide waste of waters. The ships that now plow the ocean have the speed of a railroad train, and have scarcely time in unfavorable weather to discover each other's presence before they are already abreast. The Maritime Exchange of this city has lately requested the President of the United States to invite a conference of representatives of the maritime nations to effect a reform in the present imperfect method of signaling at sea, and we would urge upon the marine underwriters the importance of taking an active interest in such a step. Such a conference might do good work as well in promoting the efficiency of the international signal code, hydrographic work, the removal of wrecks, and other similar matters.

[No. 4.]

THE PHILADELPHIA MARITIME EXCHANGE,
Philadelphia, December 6, 1887.

SIR: Referring to your letter of October 25, 1887, to the president of this exchange on the subject of a proposed international conference of the maritime nations of the world, in which you were pleased to suggest that the Department of State would be glad to be put in possession of any pamphlets, etc., relating to the subject in question, I have the honor to inform you that this exchange has this evening shipped to your office, by Adams Express, a copy of the "Final Report of the Royal Commission on Loss of Life at Sea," in three parts, for your information.

Permit me to invite your attention to the marked paragraph on page 25, and to the summary of recommendations on pages 29, 30, and 31 of Part I of the report, which seem to this exchange to bear directly upon the subject under consideration.

Your obedient servant,

EDWARD B. SHARWOOD,
Secretary.

The SECRETARY OF STATE,
Washington, D. C.

ROYAL COMMISSION ON LOSS OF LIFE AT SEA.

[Report to the Queen's Most Excellent Majesty.]

MAY IT PLEASE YOUR MAJESTY,

We Your Majesty's commissioners humbly submit to Your Majesty the following report:

The commission was appointed to inquire into the extent and cause of the loss of ships and lives at sea since the report of the commission on unseaworthy ships, and to report on the remedies for such losses, having special but not exclusive regard to the following subjects: The laws concerning marine insurance and the liability of ship-owners, the functions and administration of the marine department of the Board of Trade, the functions of the court before whom wreck inquiries are conducted, the condition and efficiency of merchant officers and seamen, and the best means of improving the same.

The commission on unseaworthy ships, to which the instruction refers, reported in the year 1874, after an inquiry which had lasted upwards of two years. Under the influence of public opinion, which had led to its appointment, Parliament had already passed two important acts relating to merchant shipping, the one in 1871, which made it a misdemeanor to send a vessel to sea in an unseaworthy state; the other in 1873,

(36 and 37 Vict. c. 85), which empowered the Board of Trade at their discretion "to detain any British vessel which they had reason to believe was, by reason of the defective condition of her hull, equipment, or machinery, or by reason of overloading or improper loading, unfit to proceed to sea without serious danger to human life." Power was also given to the Board of Trade to detain ships for the purpose of survey, to impose conditions as to their repair, and to enforce alterations in the loading of ships.

The commission was pressed to extend the system of periodic survey, which now exists in the case of passenger ships, to all vessels in the merchant service. A great part of their inquiry and report was directed to this subject. They concluded by expressing the opinion that the Board of Trade possessed under the act of 1873 ample power to survey and to detain any British ship which they had reason to believe was overladen, or was in any respect of hull or of equipment unseaworthy; that this large discretionary power rendered it, in their opinion, unnecessary and inexpedient to subject all British ship-owners to the delay and annoyance of official surveys and inspections. They believed the wisest course would be for the board to interfere only when there was ground for suspecting some gross mismanagement, and whenever the case for detention appeared doubtful, to direct the attention of the ship-owner or manager to the circumstances which had attracted official notice. They considered that an improved system of inquiry into casualties at sea would afford the best means of guarding against future disasters. So far as they had been able to ascertain, the losses of life and property at sea which might be directly ascribed to negligence of ship-owners were few in comparison with those which were caused by subsequent neglect of officers and seamen or by events over which the ship-owners had no control. A more searching system of inquiry, they thought, might elicit the truth upon this subject. They attached great importance to the suggestion that the marine department of the Board of Trade should be revised and strengthened. Some additional assistance, they said, was requisite for the due performance of the duties now intrusted to the board. It would be the duty of the Board of Trade to check the negligent and to punish the culpable ship-owner, but it was desirable that these functions should be performed without harassing the great body of ship-owners, who, by their ability and indefatigable energy, had contributed to the prosperity of the Empire. In accordance with these views, they had been anxious throughout their report not to transfer responsibility from the ship-owners to the executive government. It was the duty of the ship-owner to keep his ship in a seaworthy condition, and to select competent officers and crew. They believed that under the arrangements suggested in their report the Board of Trade would have the means of ascertaining how far this duty had been fulfilled, and would have power to punish those persons who had been neglectful. Such a policy, judiciously administered by the Board of Trade, would contribute to the greater safety of life at sea, and would thus tend to produce the results which the commission was appointed to secure.

The commissioners, besides making specific recommendations in the directions thus indicated, devoted a considerable part of their report to the question of marine insurance. On this subject they expressed themselves as follows:

"The system of insurance, while it protects ship-owners against losses which would otherwise be ruinous, tends to render them less careful in the management of their ships. Underwriters and insurance companies have, however, a direct interest in the seaworthiness of ships, and in the honesty of ship-owners. Confidence is the foundation of an underwriter's business; and, in accepting or rejecting a risk, the prudent underwriter is to a great extent guided by his knowledge of the persons with whom he has to deal. The large capital which is now invested in marine insurance would be unprofitable, unless the great majority of ship-owners and merchants were known to be deserving of trust. It is said that the profits derived by prudent underwriters have led speculative persons and new companies to engage in the business. Competition in insurance encourages carelessness in ship-owners, and thus increases disasters at sea. The law has operated in the same direction, not merely by relieving the ship-owner from all loss when his ship has foundered at sea, but by even enabling him in some cases to derive a pecuniary profit from the shipwreck."

The commissioners, however, considered that a complete and thorough revision of the law relating to marine insurance was a task of equal importance, difficulty, and delicacy, requiring evidence of so extensive a character and necessitating so very lengthy and careful an investigation, that they did not think it properly fell within the scope of their commission. They pointed out that under the existing law and by means of the various contrivances which they had explained, the ship-owners could so far release themselves from all liability that the cost of every casualty at sea was borne by underwriters. Although they were unable to advise any alteration to be made at that time in the law relating to valued policies, they made some specific recommendations with a view of checking the evils caused by insurance.

They recommended that the ship-owner should not be enabled to recover his insurance, whether under a time or voyage policy, when it could be shown either that he

or his agent had not done every thing reasonably within his power to make and maintain the ship in a seaworthy condition, and that unseaworthiness occasioned the loss. They expressed the opinion that the present system under which insurance cases are tried before a judge and jury is extremely unsatisfactory, and they thought that a judge and two assessors would constitute a far better tribunal.

They also advised the extension of the liability under Lord Campbell's act to the families of seamen where death had been caused by the unseaworthiness of the ship. They also reported on the question of undermanning of ships, of the condition of seamen, of compulsory apprenticeship, and of advance notes, as we shall further explain in later portions of our report.

The report of this commission was followed in 1875 by a temporary act dealing with the subject, and in 1876 by a permanent act.

The fourth section of this act, in confirmation and extension of the act of 1871, made it a misdemeanor for any person, whether the owner or master, to send or attempt to send, or who is a party to sending or attempting to send, a British ship to sea in such unseaworthy state that the life of any person is likely to be thereby endangered, unless he should prove that he used all reasonable means to insure her being sent to sea in a seaworthy state, or that her going to sea in such unseaworthy state was, under the circumstances, reasonable and justifiable.

The fifth section provided that in any contract of service, expressed or implied, between the owner of a ship and the master or any seaman thereof there should be an implied obligation on the owner of the ship that the owner or the master, or the agent charged with the loading of the ship or preparing thereof for sea, or sending it to sea, should use all reasonable means to insure the seaworthiness of the vessel for the voyage at the time when the voyage commenced, and to keep her in a seaworthy condition for the voyage.

The sixth section provided that the Board of Trade, if they had reason to believe, on complaint or otherwise, that a British ship was unsafe, might provisionally order the detention of the ship for the purpose of surveying it, and that on receiving the report they might either order the ship to be released, or, if in their opinion the ship was unsafe, might order her to be finally detained, either absolutely or until the performance of such conditions with respect to the execution of repairs or alteration, or the unloading or reloading of cargo, as they might think necessary for the protection of human life.

The board was empowered to appoint surveyors with power to order the provisional detention of ships for the purpose of survey.

Local courts of appeal were also constituted to report on the survey of ships so detained.

By section 10 it was provided that if it should appear that there was not reasonable or probable cause, by reason of the condition of the ship, or the act or default of the owner, for the provisional detention of the ship, the board of trade should be liable to pay to the owner the cost of and incidental to its detention or survey, and also compensation for any loss or damage sustained by reason of the detention or survey.

By section 29 power was given, for the purpose of rendering investigations into shipping casualties more speedy and effectual, to appoint a wreck commissioner, who should have all the jurisdiction and powers conferred by the merchant shipping acts of 1854 to 1876 with respect to the investigations into wrecks and casualties, and with power to appoint assessors of nautical or engineering skill or knowledge out of a list approved by a secretary of state.

It will thus be seen that the act endeavored to promote security of life at sea, in part by increasing the responsibility of owners and of those concerned for sending their vessels to sea in a proper condition, through the process of the criminal law; in part by increasing the powers of the board of trade and conferring on it the obligation of detaining and preventing vessels from going to sea in an unseaworthy state, subject to the right of the owner of a vessel, improperly detained, to recover damages; and, in part, by strengthening very greatly the process of inquiry into losses and casualties, through the appointment of a skilled wreck commissioner, assisted by competent professional assessors.

Since the passing of the act referred to there has also been special legislation on the subject of grain cargoes and deck cargoes, imposing duties on the board of trade with a view to reduce the loss of life due to the dangerous practices of certain shipowners in these respects.

In 1875 and in 1884 bills were introduced on behalf of the Government of the day for limiting insurance to an indemnity, and, among others, for making other important changes in the law of insurance. These measures, however, were not proceeded with, and nothing has been done on this important part of the report of the commission of 1874, or with reference to their recommendation to prohibit shipowners from restricting their liabilities by the terms of bills of lading and charter-parties.

In December, 1883, a departmental committee was appointed by the board of trade to report on the important question of the load line of vessels. The committee reported in August, 1885, and its conclusions have been adopted by the board of trade.

The addition to the staff of the board of trade, due mainly to the acts of 1873, 1875, and 1876, has been very considerable. No fewer than 122 additional officers have been appointed, with salaries amounting to £34,600. The charge resulting from the appointment of the wreck commissioner, and the inquiries conducted by the board of trade, has amounted to about £25,000 per annum. And costs amounting to £9,310 have been paid by the board to ship-owners in respect of actions for the improper detention of vessels. During the thirteen years a total of 2,008 ships have been detained by the board for various causes, of which 508 were for being overladen and 1,500 for unseaworthiness of other kinds.

When we look at the general results of the legislation thus referred to upon the loss of life and property at sea in British vessels, it is most unsatisfactory to find that no sensible effect has been produced in the reduction of this loss.

From returns laid before this commission by the board of trade, the substantial accuracy of which has not been questioned, it appears that from 1874 to 1883, inclusively, there was a marked increase in the losses of British ships and of the lives of those employed on them.

Restricting this inquiry to British vessels registered in the United Kingdom, excluding fishing vessels, whether registered or not, and excluding also losses in rivers and harbors, it appears that the total number of seamen and other members of crews lost for the nine years was 14,271, and of passengers 1,324, and that for the first period of three years the numbers were 4,182 and 579, respectively; for the second period, 4,150 and 371, and for the third period, 5,939 and 374, showing an increased annual average loss of crews from 1,394 in the first period of three years to 1,979 in the last.

During the same period there was practically no increase in the number of hands employed or in the number of vessels in which those hands were employed, but there was a considerable change in the relative numbers and tonnage of sailing vessels and steamers on the register. The number of sailing vessels, including registered fishing vessels, was reduced from an average during the first period of 20,766, with a tonnage of 4,190,000, to 18,536, with a tonnage of 3,572,000, while the steamers increased from 4,353 and 2,030,000 tons to 5,856 and 3,356,000 tons. These figures include fishing vessels registered under the merchant shipping acts.

It would appear that in spite of the considerable reduction in the number of sailing vessels, the losses of these vessels and of lives in them increased both absolutely and relatively, and that the losses of steamers and of lives in them increased in a ratio considerably greater than the number of such vessels or the number of hands employed in them, even in spite of the fact, which is indisputable, that the new vessels which were built and added to the merchant service during this period were of a larger size, higher class, and of a superior quality to those of any former years. The number of vessels and number of hands employed is not, however, necessarily an accurate standard of comparison of the work done; or, in other words, the number of voyages performed by each vessel varies in different years, and has an important influence on the chances of casualties. A reference to the trade and navigation returns for each year is therefore necessary by way of correction, but even allowing for the difference of work done as indicated by these returns, the increase of loss of life is marked and out of proportion.

The most serious losses occurred in respect of vessels, excluding fishing vessels, reported as missing. No less than 699 vessels with 8,475 hands on board were reported as missing during this period of nine years, the cause of whose loss was unknown.

Some controversy has arisen as to the proportion which the seamen drowned during this period bore to the total number of seamen. According to Mr. Gray, the assistant secretary of the board of trade, the average number of men employed in vessels registered in the United Kingdom was from 210,000 to 217,000, and the proportion of men who lost their lives by wrecks or other casualties, including deaths in registered fishing vessels and in rivers and harbors, varied from 1 in 81 in 1875 to 1 in 56 in 1883; and for the triennial period increased from 1 in 75 in the three years 1875–'77 to 1 in 76 in the next period, and 1 in 58 in the last period, 1881–'83.

On the other hand, the representatives of the ship-owners allege that the number of seamen employed is taken at too low a figure; and by adding the men in port, who may or may not be actually employed within the year, they arrive at a number exceeding 300,000. Whichever method of comparison, however, be taken, the proportion of deaths from drowning of seamen was very high, and undoubtedly increased during the period under consideration.

It should be borne in mind in considering this subject that besides the lives actually lost at sea very many more have been endangered and only preserved by the means of safety so largely provided both by Government aid and by private philanthropic effort. It appears from tables laid before us by the board of trade that in the nine

years ending June 30, 1883, no less than 96,494 lives were saved at home and abroad, chiefly by life-boats, rocket apparatus, ships' boats, and help from other ships. All these lives were endangered by causes similar to those which have produced the actual loss of life referred to in previous paragraphs.

The statistics above referred to were the latest available in the earlier inquiries of the commission in 1885. Since then, however, the statistics of three additional years have been obtained. From these it appears that the loss of life amongst crews and officers in merchant vessels registered in the United Kingdom, which was 2,019 in 1883, fell in 1884 to 1,181, in 1885 to 1,190, and in 1886 to 1,067, and this loss, which had averaged 1,979 for the three previous years, fell on an average for the three years 1884–'86 to 1,146, a reduction of 42 per cent., showing a very great and satisfactory diminution. These figures, however, must be read in connection with the trade and navigation returns for these years, the most reliable indication available of the work done.

In forwarding these figures to the commission, Mr. Gray, referring to this diminution, says that he believes there have been three operating causes. In the first place, the weather has, on the whole, been comparatively favorable; in the second place, there has been a marked, almost a general, decrease in the valuations of ships in policies of insurance; in the third place, the attention bestowed on the depth of loading and methods of loading and the general seaworthiness of ships has had effect; and it may also be that many ships, especially steam-ships, have been laid by. He calls attention, however, to the fact that too many steamers are still reported as foundered or missing; for notwithstanding the great and satisfactory diminution of all other casualties to both steam and sailing vessels, these losses of steamers, the worst of all classes of losses, viz, foundering or missing with all hands, do not show a proportionate diminution.

It is difficult to believe that a difference of weather can have disturbed the average of so long a period as three years, as compared with a previous period of nine years. Well-found ships belonging to the best lines keep the sea in all weathers, and without serious casualty, and several of the witnesses examined by the commission stated that bad weather was not a sufficient cause of loss of ships and life. In our opinion, bad weather brings into operation other causes of loss, but does not in itself, except in rare cases, afford a justification for them. It may be, however, that the average of the three years, 1881 to 1883, was exceptionally high, owing to the severe weather of 1881 and 1883, but even if these years be eliminated from the comparison it appears that the average loss of seamen for the other seven years was 1,414, while for the last three years, 1884 to 1886, it was only 1,146, showing a reduction for the later period of 19 per cent. We would point out that as no general reduction of insurances occurred before the spring of 1885, this cause could not have affected the greater safety of life in 1884; but we think that this great reduction has been due in part to greater care on the part of some ship-owners, induced by the great public attention directed to the subject of loss of life at sea in 1884, and in part to the depression of the shipping trade which commenced in that year, and which led to many inferior vessels being laid up. In any case it would appear that a large proportion of the loss of life in previous years was due to causes within control, and therefore preventable.

To whatever cause this diminution of loss of life during the years 1884–'86 may be due, it can not be contended that it was in any way the result of the legislation of 1875 and 1876; and the fact remains indisputable that, in spite of all the provisions made by Parliament, and the great increase of the staff of the board of trade, entailing a very large charge upon the country, there was not only no diminution in the loss of life at sea on merchant vessels in the years following on this legislation, and up to the year 1883, but a considerable increase.

This increase was the more remarkable, as undoubtedly a very large number of vessels were prevented going to sea in an unseaworthy state by the action of the surveyors of the board of trade, and this action also led to the breaking up of a considerable number of vessels of the lowest grade, whose owners feared they might be detained by the board of trade under the powers of the act of 1876. If these vessels had not been interfered with, it might well have been that the loss of life would have been even greater than it proved to be. On the other hand, it is equally clear that the surveyors of the board of trade were unable to prevent a large number of vessels going to sea in a state which undoubtedly contributed to if it was not the immediate cause of disaster and loss. The result of the official inquiries held in various courts, whether by the wreck commissioner or by magistrates, has been to indicate that in a great majority of cases the vessels were overladen, improperly stowed or ballasted, unstable, or defective in hull, machinery, or equipment. Of the missing ships, where there was nothing to show to what cause the casualties were due, it is reasonable to believe that, if evidence had been forthcoming, it would have shown that the causes of loss were not different from those in respect of vessels where the causes could be assigned.

Of the vessels lost by stranding—which next after missing vessels occasions by far the greatest loss of life and property—and by collisions, it is undoubtedly the fact that a very great number of losses were due to the misconduct or neglect or error of judgment of the officers or persons in charge of the ships; and we are satisfied that in a large proportion of these cases the loss was due not to mere error of judgment, but to the neglect by the master or officer of the most ordinary rules and precautions of navigation. We notice, especially, habitual neglect of the use of the lead and omission to slacken speed in fog.

We think, however, that owners may do much to prevent this class of accident by a careful selection of masters and officers, and by insisting on the strict observance of recognized rules and precautions, especially as masters undoubtedly feel the pressure of the demand for quick passages. We also think that neglect of the lead is sometimes attributable to an insufficient number of hands in the watches, and that this also sometimes affects the character of the steering and look out, and has thus a bearing on both strandings and collisions.

From these and many other facts brought before the commission in the course of our inquiry we are unable to come to any other conclusion than that the hopes and intentions of Parliament to reduce the loss of life at sea by the various provisions of the acts referred to, and through the general powers intrusted to the board of trade, have not been successful, and that all the measures adopted have hitherto had little or no effect.

As illustrating the causes of failure, we desire to call attention especially to the evidence of Mr. Gray and other officers of the board of trade.

With respect to one very important provision of the act 1876, which made it a misdemeanor for the owner or manager to send a ship to sea in an unseaworthy state, it appears that the legal and other difficulties attending its enforcement have been such that it has almost become a dead letter. There have been upwards of 200 cases up to the end of 1884, where the board of trade officials considered that the facts before them constituted *prima facie* cases for the institution of proceedings under this section, but they have only been able to prosecute in 14 cases and in only 3 of these have verdicts been obtained. Four cases were tried in Ireland under the earlier acts, of which three were successful, and there was one unsuccessful prosecution in Scotland. The difficulties which have arisen in carrying this provision into effect have not resulted from vagueness in its wording or from the judges having limited its effect in their construction.

The provisions of the existing law and the obligations which it imposes are ample. The mere sending of a British ship to sea in a dangerously unsafe condition is expressly declared to be a criminal act, and the offense is made a misdemeanor involving liability to heavy punishment, unless there are circumstances which excuse or justify it. It is also not necessary to constitute the offense that the dangerous condition of the ship was known to the sender, or that it has produced evil consequences or injury either to life or even to property. It is sufficient that the life of any person is even likely to be put in peril. The criminal act is the sending a dangerous ship to sea, and it is committed according to the terms of the section, whether the voyage is safely performed or not. Again, not merely the owner, but every person who sends or attempts to send, or is a party to sending such a ship to sea is liable to the penalties imposed. The language of the enactment itself which defines the offense is clear and definite. Lastly, the judges in interpreting the law have in general not cut down or limited the responsibilities which it imposes or narrowed the meaning of the language used. On the contrary, they have laid down in clear terms the full measure of active duty, vigilance, and care which the law demands.

The difficulties which have arisen are partly those inherent in all proceedings of a criminal nature, where technical proof of a high degree is required, and partly those arising from the general unwillingness of juries to convict in cases where it was possible for the officers of the board of trade under the other powers conferred on them by the same act to have intervened for the purpose of preventing the commission of the offense by detaining the vessel.

Juries shrink from giving verdicts against ship-owners where the offense proved is constructive rather than actual; where there is an absence of proof of deliberate individual or gross negligence; and where the ship-owner has delegated the duty of looking to the seaworthiness of the vessel to the master or shipwright, although such a course does not legally relieve him from responsibility. The greatest difficulty, however, in obtaining convictions arises from the concurrent provisions of the act of 1876 with respect to the detention of vessels by the board of trade. It is presented to the jury on behalf of the ship-owner, who is prosecuted under the penal clause, that the exercise of this power would have prevented the commission of the offense, and it is contended that the non-exercise of it is either conclusive proof that the ship was safe or is justification for sending it to sea in an unsafe condition under the belief that it was safe. The criminal remedy is, therefore, made ineffectual by the concurrent detaining remedy; and it would appear that in such cases criminal liability and official prevention can not efficiently co-exist.

The alternative procedure provided by the acts of 1875 and 1876, namely, that by which the board of trade is empowered to detain vessels which are unseaworthy, and to prevent them from going to sea, is attended with almost equal difficulty, and in practice has proved to be inefficacious. The difficulties which have arisen in putting these provisions into force have been fully explained by the officers of the board of trade, and especially by Mr. Gray, the head of the marine department, charged with the superintendence of these duties. In their opinion the duty now imposed upon the board of trade is so hampered by courts of survey, with appeals, and with obligations thrown upon the officers of the board, which they can not possibly meet, that if it is to be continued the procedure must be fundamentally altered. The chief of these difficulties is the liability of the board of trade for damages for the wrongful detention of a vessel if it should turn out, in the opinion of a jury, that the vessel was in a seaworthy state when detained. With this liability hanging over the heads of the officers of the board, when they are performing their duty under the statute, their sense of responsibility is so weakened that, although they appear to have plenty of power to interfere with unsafe ships, it is not so in practice, and they are often afraid to put the act in force, lest in so doing they should incur liability for damages as against the board whom they serve.

It is stated that the first effect of these provisions was to drive off the British register many vessels which did not come up to the idea of seaworthiness of the surveyors; but that since then their tendency has been rather to lower the general average of vessels in respect of seaworthiness than to raise it, notwithstanding the general improvement in the building and equipment of ships. Mr. Gray accounts in this way for the fact that, in spite of the very greatly increased expenditure of the board of trade, and the very large addition to its staff of surveyors, there was not only no reduction in the loss of life at sea up till the end of 1883, but the reverse. The procedure has, in fact, tended to relieve the ship-owner from responsibility, for he is able to say that his vessel went to sea under the eye of the board of trade surveyors, whose duty it was to detain her, if unseaworthy; and juries, as already explained, are only too ready to take this view of the case.

The claims against the board of trade for damages on the part of ship-owners who think that their vessels have been wrongfully detained lead to judicial inquiries, involving scientific and legal difficulties of all kinds; and where a Government Department is the defendant, the presumption of juries is generally against it. Yet the duty of the Department to act on the reports of its officers is insisted upon. These officers are expected to act on the one hand under a heavy responsibility for human life, and on the other with the knowledge that for the slightest mistake in a matter and at a time when certainty is impossible, the Department which they serve may be involved in the discredit of their errors and in enormous liability for damages and costs. In Mr. Gray's opinion, if this power of detention is to continue and to be made efficacious, it should be freed from the liability of the board for damages in the event of a mistake being made by its officers; but experience of the working of the act has confirmed him in his opinion that this is not the best direction for legislation, that it is rather by increasing the personal and civil responsibility of the ship-owner that it can best be hoped to prevent unseaworthy vessels from going to sea; failing this, the existing system of inspection or detention must be continued, subject to its being made a reality, and not a sham, by relieving the board from the liability for damages.

Under all these limitations and difficulties it can not be matter of surprise that the act of 1876 has failed to effect the good results that were expected of it, and that its principal provisions have rather tended to mark out to negligent and ignorant ship-owners the limits within which they can safely operate without being interfered with by the board of trade, and without being made amenable to the criminal law, and that consequently its effect has been rather to level down the average of the vessels, other than those of the first class, than to level them up to the condition of the better class.

The question then arises whether it is possible to make this method of procedure effective as against the minority of ship-owners whose negligent acts contribute to the loss of life at sea, or whether there is any alternative policy more likely to effect the same object.

Short of an effective survey of every vessel before proceeding to sea of the same rigid and minute nature as that which is now instituted in the case of emigrant ships, we do not see that any good results can be anticipated from the extension of the system of surveys and from the increase of the powers of detention. A survey such as is instituted in the case of emigrant vessels would, if applied to the general trade of shipping, result in the employment of an army of surveyors, at an enormous cost to the country; it would only be made effective by intrusting the board of trade with absolute powers, not subject to be revised in the courts of law by actions on the part of those who believe themselves to be wronged. It would almost necessarily result either in the surveys becoming mere formalities, as is the case in France, or in the management of ships and everything connected with them being transferred from

the owners to Government officials. We do not believe that in the long run such a system would conduce to the improvement of shipping, or to the greater safety of life at sea. It would tend still more to level down rather than to level up the average condition of vessels; and it would impose great impediments to the progress of improvements.

The other alternative policy which is possible is that of increasing the direct civil responsibility of ship-owners for sending their vessels to sea in a seaworthy state and keeping them in this condition. This civil responsibility of the ship-owners may be considered in its relation (1) to underwriters who insure the vessels, (2) to charterers and others who are the owners of the cargoes which the vessels carry, and (3) to the officers and men employed on the vessels.

(1) *Responsibility of ship-owners under the law of insurance.*

It is generally admitted that, however necessary the practice of insurance may be for the carrying on the business of ship owning and for spreading the incidence of unavoidable losses over others than the owners, it is nevertheless not unattended by countervailing evils and by dangers in respect of the safety of the vessels insured, and consequently of the persons on board them.

In the opinion of a high authority on the law and practice of insurance, Mr. Lowndes, as stated in a work recently published by him on this subject, "marine insurance has always been recognized as an extremely useful but likewise a very dangerous contrivance. * * * If the merchant is of an anxious disposition, or is trading to the full stretch of his capital, and is therefore afraid to run an unnecessary risk, he can, by a full valuation, secure himself against anxiety so completely as even to know that a shipwreck would be a source of gain to him." * * * "That which raises a doubt on the matter (the question whether there should be an unrestricted liberty to insure) is the consideration which presents itself under various forms, that the practice of insurance takes away one of the principal safeguards for property and life exposed to hazard on the seas, in taking away from him who is to build and fit out a ship, and from him who is to select a suitable ship for the carriage of his wares, that motive for caution which is given by immediate self-interest. The ship-owner or merchant who insures may feel that the safety of the ship on her voyage is a matter of indifference to him. It is hardly necessary to follow out the possible results of this indifference to their various consequences. Scamped work in the building of a ship, stinted equipments, undermanning, unwise economy in every department, overloading, undue venturing on hazardous voyages, carelessness in the selection of officers, in a word, the conduct which may be expected from men, some of whom may be of lax principle, under constant temptation to work as cheaply as they can when relieved of the natural penalty for carrying economy too far, because any loss which may ensue from it does not fall upon themselves. Nor is this all; we have still to take account of the possibility of deliberate fraud. Nothing is easier than to effect insurances to an extent far beyond the real value of the property, and when this is done it may be in the power of those who have the safety of that property entirely in their hands to make a large gain by casting it away. These are the considerations which have at all times led statesmen and legislators to regard marine insurance as a dangerous thing, needing to be carefully watched and guarded against abuse.

"In the process of passing through France into the English courts of law the statesman's view of marine insurance has been almost completely lost sight of, while the mercantile aspect has had almost absolute free swing."

It appears to us that the interference with the responsibility of ship-owners resulting from full insurance has its bearing upon every matter connected with shipping, the construction of the ship, its loading, its equipment, its manning, its officers and crew, and the sailing directions given to them. An owner who is fully insured, as compared with one who is uninsured, or who bears part of the risk himself, is almost insensibly deprived of many of the motives or inducements to care and caution which must inevitably be entertained by the other.

It is also certain that there have been instances in which ships have been lost with all hands, and where the owners, by being insured for more than the full value of the vessel and all reasonable expectations of freight and profit, have been considerable gainers by the loss. Such cases have been brought under the notice of the commission by Mr. Rothery, the wreck commissioner, and by Mr. Gray.

Mr. Hollams, a solicitor with great experience in cases of marine insurance, states that it has happened a great many times in his knowledge that ship-owners have made a profit out of the loss of their vessels, and to a very considerable extent.

It is stated that there are two main methods by which this can be effected. The one is due to the rule of law by which the valuation of the ship between the owner and the underwriters is held to be binding against the underwriters unless it is fraudulent; so that in contradistinction to the law and practice of fire insurance on property on land, no power exists of reducing the valuation of the ship when lost so

as to limit the amount that the insured person recovers to an indemnity. The other is that in the insurance of freight no deduction is made for the expenses of the outfit, the wages of the crew, provisions, etc., many of which are prospective payments only; so that on the loss of the ship, the owner receives from the underwriters the amount of prospective earnings of the ship, without deduction for the necessary expenses which would have been incurred in earning freight.

The law on these two points has grown up under the decisions of judges, without the sanction or review of the legislature, and in opposition to the views of some of the earlier judges. Lord Mansfield, for instance, in the case of Hamilton *v.* Mendes, decided in the year 1761, said "An overvaluation is contrary to the general policy of the marine law, contrary to the spirit of the act of George 2, c. 19, a temptation to fraud, and a source of great abuse; therefore no man should be allowed to avail himself of having overvalued. The insurer by the marine law ought never to pay less upon a contract of indemnity than the value of the loss, and the insured ought never to recover more."

Later, however, the courts of law came to an opposite conclusion, and upheld the practice of valued policies, and declined to reopen them on the ground simply of overvaluation. In 1801, where in a case of insurance under a valued policy the underwriters contended that the valuation included provisions and sea stores for a cargo of slaves, that before the loss of the ship the slaves had been sold at a profit, and that consequently the insured was not entitled to recover the full amount insured under the valued policy, Lord Kenyon said:

"It is not pretended now that there was any fraud in the case; but it is contended that the underwriter is not bound by the valuation in the policy. It is of little consequence to inquire what my opinion would have been upon the subject of valued policies in the year 1746, immediately after the statute of 19 George 2d passed, for very soon after they were decided to be legal by as cautious and upright and painstaking a judge as ever presided in this court (Lord Chief-Justice Lee). He was succeeded by Sir Dudley Ryder, and this latter by Lord Mansfield; and during all this period such policies have been sanctioned by one uniform course of decisions. All this is now supposed to be wrong, and the rules by which this and other commercial nations have so long regulated their dealings are now wished to be disturbed; but I will not lend my aid to open such a new and wide door of litigation, much exceeding everything that has gone before. If we were to enter into the calculations which have been contended for, every valued policy would have to be opened. Every man's meal on board a ship would take from the value of the original outfit. Is this to be endured? Will good faith admit of it? Where is the line to be drawn between a greater or less diminution of the value? Therefore, as the rule and practice of valued policies have been acted upon and sanctioned since the passing of the statute, I am not one who wish *quieta movere*."

The rule thus laid down with respect to valuation in policies has led to a further extension and to a greater departure from the doctrine of indemnity. In the case "of Irving and Manning, decided in 1847 (1 H. L. C., 287), the ship was worth £9,000, but was valued in the policy at £17,520. Then there was a constructive total loss. She sustained damage which it would have cost more than her *real* value to repair, and it was held that the owners had a right to abandon her and claim the whole £17,500. Thus the underwriters had to pay the owner £17,500 for the loss of a ship which confessedly, if it had been repaired, would not have been worth more than £9,000. Mr. Justice Patteson, in delivering the judgment of the judges before the House of Lords, for it was a case in which the judges were called in to give their assistance, said: 'It is agreed that this course of proceeding (*i. e.*, the valuation being conclusive) infringes on the generally received rule that an insurance is a mere contract of indemnity, for thus the assured may obtain more than a compensation for his loss; and it is so. A policy of insurance is not a perfect contract of indemnity. It must be taken with this qualification, that the parties may agree beforehand in estimating the value of the subject assured, * * * as indeed they may in any other contract of indemnity.'"

A constructive total loss by abandonment arises whenever the ship though existing in fact is lost for any beneficial purposes to the owner. By law of England the right to abandon a ship and claim for a constructive total loss arises where the injury sustained by the vessel is so extensive that by reason of it the cost of repairing her would exceed her value when repaired, irrespective of the valuation in the policy of insurance. In such a case the right to abandon and claim for a total loss is absolute, and the insurer can not elect to repair the ship and restore her to the owner.

We have the testimony of Mr. Rothery, the wreck commissioner, to the following effect: "As regards insurance," he says, "I have no doubt whatever, notwithstanding all that has been said to the contrary, that there are a great number of vessels that go to sea overinsured, and I can hardly have a higher authority for that statement than the evidence that was given by Mr. Justice Butt himself before the unseaworthy ships commission. In answer to question 13,600, he says this: 'I have a notion that a very great number of ships go to sea overinsured, taking ship and freight

together; and I have also the impression that a considerable number of ships are lost mainly owing to that circumstance. I do not mean to say that they are cast away intentionally, but that it has this effect, it prevents the careful supervision which should be exercised before the vessel puts to sea; and I can not help thinking that a great many ships do go to sea in an unseaworthy state, being overinsured, when they would not go to sea in that state if they were underinsured.'" That, Mr. Rothery says, is in accordance with the facts revealed by the different cases which have come before him during the time he has been wreck commissioner; he gives many cases of the kind in his evidence by way of illustration, and he sums them up by saying:

"These cases, it appears to me, sufficiently show that ships are frequently sent to sea insured in sums very much in excess of their real values, so that, if they are lost, the owners, instead of being losers, are in reality gainers by the casualty. Now I have never quite been able to understand why an owner should be entitled to insure his property above her value, nor why, if either through carelessness or fraud, he sends her to sea in an unseaworthy state, he should be entitled to recover his insurance. We know that a seaman can not insure his wages, and that this prohibition is founded upon a very intelligible principle, namely, 'that you shall do nothing which will diminish the incentive to exertion on his part, that you shall not hold out to him a premium to cast away his vessel, or induce him to refrain from exercising all his courage and skill and energy in preventing her becoming a wreck.' Why the same principle should not be applied to the ship-owner, and why we should not say to him that he shall not be entitled to make a gain by losing his vessel, and that if he chooses to send his ship to sea in an unseaworthy condition it shall be at his own risk, I have never been able to understand. Some people think that a ship-owner ought not to be allowed to insure his earnings on the voyage, that is, his freight, any more than a sailor is entitled to insure his earnings, that is, his wages. And although I am not prepared to go to that extent, I am clearly of opinion that he ought not to be entitled to make a profit out of the casualty, and that he ought not to be entitled to recover his insurance if the ship has been sent to sea in an unseaworthy state, or if he had not taken all reasonable precautions to prevent the casualty. A law to this effect would, it seems to me, tend greatly to reduce the number of casualties at sea."

It would seem that the principle and practice which have thus been introduced into the law relating to marine insurance and the business of ship-owners are contrary to the principles which were originally laid down by the courts, and which have actuated the legislature whenever it has dealt with the subject.

It has been held, for instance, that wager policies, that is, policies effected where there is no interest in the ship or freight, are void; that no insurance can be effected on freight unless there is an actual contract entered into as a basis of an insurable interest; that in cases of double insurance the owner must elect on which policy to claim, and can not recover his loss twice over; it has also been held on grounds of public policy that a seaman can not insure his wages, lest he should cease to have an interest in saving the vessel. In view of these principles it is difficult to understand on what ground the law permits a ship-owner to recover under a policy of insurance a sum largely in excess of the real value of his vessel or its freight.

It may be said that there is some protection against the evil consequences which are likely to arise from the facility for overinsurance in the implied condition which attaches at law to ever voyage policy, that the ship shall be seaworthy at the commencement of the voyage. The unwillingness, however, of juries to find verdicts against ship-owners in such cases, and in favor of underwriters who have already received premiums for the risks which they have run, very greatly reduces this security. The warranty of seaworthiness also attaches at the commencement of the voyage, and there is no implied condition that the owner shall keep the vessel in a seaworthy condition pending the voyage. There is also no such condition of seaworthiness attaching to time policies, the House of Lords having by a majority decided thirty-two years ago that no such warranty can be implied. This difference between time policies and voyage policies is the more important, as owing to the conditions of the employment of steamers time policies are far more frequent than was formerly the case, and are becoming the rule, rather than the exception.

Again, it may be said that, being virtually unprotected by any warranty as to seaworthiness, it is to the interest of underwriters to satisfy themselves as to the condition of vessels before accepting insurances, as well as to decline risks at excessive valuations, having regard to the temptations offered to ship-owners by the present law as to constructive total loss; and that thus a check exists not only on overinsurance, but also on vessels being sent to sea ill-found or otherwise unseaworthy.

In practice this is not the case. An underwriter is rarely able to obtain minute information as to the many circumstances affecting the seaworthiness of a particular vessel when considering a risk, and can form but an approximate idea as to valuation from the information at his disposal; and although it would be difficult, if not impossible, for an unscrupulous owner grossly to overinsure by legitimate policies

on "hull" as such, it is easy for him to affect insurances to an extent far in excess of the actual value of his vessel by dealing with many different underwriters and adopting the very common device of supplementary honor policies on "advances," "disbursements," and other imaginary interests. It is also the fact that underwriters prefer a full valuation to a low valuation; by the custom of their business they are not liable for partial damages which do not amount to 3 per cent. on the insured value, and as the small claims for partial loss form a serious part of the losses of underwriters, it is their interest to reduce them as far as possible by raising the valuation of the ship; moreover, the higher the valuation the greater the number of underwriters between whom the risk is divided, and the smaller the amount which each underwriter will have to bear in respect of each partial loss.

Apart from the facilities which the law, as determined by the judges during the last fifty years, has given for the recovery of amounts insured by ship-owners largely in excess of the value of the vessels, there has been a tendency in the practice of ship-owners more and more to cover by insurance every loss which by any possibility could fall upon them, thus reducing their motives to do all in their power to prevent loss. It has also been stated that of late years there has been a great increase of "honor policies" by which the underwriters are bound in honor to pay on loss of the vessel without any question as to the interest of the insurer. These policies are not enforceable at law, but there is no penalty against their being entered into, and by the unwritten law of business the underwriter who disputes an honor policy is discredited. Mr. Dale, the underwriter for the British and Foreign Marine Insurance Company, says "that the present law is liable to be defeated by 'honor policies.'" He objects to them "because they are the most easy mode by which the owners can overinsure, and some not only overinsure, but insure the same interest in different form many times over; and that without the knowledge of the underwriter on the ordinary legitimate policy; in fact practically taking away from the underwriters on the legitimate policy the power to supervise the amount which is being insured." Mr. Lowndes says "that these honor policies are very largely resorted to; when any one desires to effect an insurance either when he has no real insurable interest or when he does not wish to be put to the trouble of proving in the case of loss he effects an honor policy. I have known the case of a very respectable man who was practically driven out of Liverpool because he once defended an action of law in which he was victorious, refusing to settle in one of these honor policies."

Mr. Janson, a leading underwiter at Lloyd's, says that during the last thirty years the average ship-owner's interest in his adventure has been continually decreasing, owing to the change in practice referred to. "Formerly," he says, "ship-owners were greatly interested in the avoidance of casualties by the amounts which it fell to their share to pay. These, according to my experience, were much larger than at present. When I first came into business my uncle, who was a partner in our firm, and who was forty years in Lloyd's before he retired, and a man of large experience, always used to set before me that, as a rough and general rule, a ship-owner's share of the expenses of repair (new for old) and the many accompanying incidental expenses was nearly or about equal to what the underwriters had to pay in partial losses. I should say that the ship-owner's share either equaled the underwriters' or mounted up to within three-fourths or two-thirds of it. * * * But little by little the ship-owner's share had dwindled to nothing. * * * This diminution of liability has been brought about partly by fresh decisions of the judges, partly by the insertion of fresh clauses in ordinary policies, and mainly by clubs instituted for the very purpose of bearing liabilities which the owner of the ship up to that time had borne himself."

Elsewhere he says: "None, probably, will deny that there has been a great tendency of late years to enlarge the scope of marine insurance contracts, so as to relieve the ship-owner of burdens and liabilities that in times past were always reckoned to be fairly his. The extension of general average under the York-Antwerp rules, the multiplication of protection, 'one-fourth' and other clubs, and the insertion of clauses in the ordinary policy, all bear witness to this fact. Thus, the cost of wages and provisions in a port of repair, the one-fourth running down liability, the one-third ditto of cost of repairs, and, in some instances, the liability for claims under 3 per cent. on ships not stranded, are all burdens that have lately disappeared from the ship-owner's back. It is not difficult to understand how this tendency has arisen when one looks at the overtrading exhibited by numerous single-ship and other shipping companies, managed by men who have a very slight interest in the concern, and with no surplus funds in hand upon which to fall back in time of need; and when one also looks at the competition existing amongst underwriters, not alone of that healthy kind to which all in a free-trade country are subject, but more especially of that which results from the fact of so large a portion (shall we say one-half?) of the underwriting of the country being in the hands of those who, as the direct agents of the ship-owners, are bound by every tie of duty and interest to do all in their power to meet their every wish. It may be urged, perhaps, that not only does this tend-

ency facilitate enterprise, but also that the more an underwriter has to insure the more he ought to make, and that, if he does not, it is only his own fault for not taking care that he has sufficient premium. But the point I want now especially to insist upon is, that when a ship-owner's interest in avoiding casualties is reduced below a certain point, no money consideration will repay his underwriter. In other words, that everything is not simply a matter of premium, as is often urged, and that when underwriters become not merely guarantors against sea peril, but guarantors against the consequences of other people's want of conscientiousness and good faith, their whole business becomes *contra bonos mores*, and then no wonder that there is a great cry for the legislature to step in, and that, as at the present moment, a royal commission is appointed to look into this loss of national life and national wealth, because of the deep conviction that many losses at sea, although preventible, are not prevented. Owners sometimes urge that the capital absorbed in the large steamers now in use is so great that their putting into a port of refuge, or being otherwise delayed, even for a single week, causes a loss of interest that is itself a reason for their using every caution; but where these steamships are managed by those who have but a small money interest in them, this consideration has little or no place. Neither can it be at any time a very cogent one, especially when freights are low."

In reply to the question whether he thought that this state of affairs affected the management of steamships in almost every particular, he said, "Yes; in almost every point in the management of a vessel. For instance, if a man goes to buy a vessel, of course, if he had any interest in the machinery not breaking down, the first thing that would occur to his mind would be that he must go to the best builder that he could get, but now why should he pay more than to the cheapest, for he has nothing to gain by going to the best. Again, in the selection of the captain and crew, a man with a bad character, but with a little money, may answer his purpose as well as a good man if he is covered from all loss by reason of his servant's negligence. Then in putting off repairs, they are all paid for if arising at sea. Then the more cargo he carries the more he makes, and the quicker the passages he can make the better. Then there is the going to sea in heavy weather in order to save a little time, which is a most fruitful source of loss. If he has no interest in avoiding that, why should he put it off? Then again we come to the question of taking dangerous freights, which of course are the most lucrative, and if they are not to cost him anything by reason of their danger why should he not take them? and so on in almost all directions. He has no interest really in the safety of the vessel. It is simply a money-making matter to him without any other consideration, except such as his own sense of duty may inspire."

When, on the other hand, ship-owners do not insure, or when they take themselves a portion of the risk and only insure a part of the value of their vessels, there can not be a doubt that this fact has a most important bearing on the safety of their vessels, owing to the greater care which is necessarily induced; of this we have had many illustrations. Mr. Fowler, the stipendiary magistrate of Swansea, mentions the case of Mr. Richardson, who died in 1884, and who had carried on the business of ship-owning for thirty years. He owned on the average 10 ships, which were regularly dispatched on long voyages, chiefly round Cape Horn, and allowing for two voyages a year he must have completed some 500 to 700 voyages. It was his practice never to insure his vessels. In the course of his long experience he never lost a vessel but one, and that upon a sunken rock which was not marked on the chart.

Another case is that of the firm of George Thompson & Co., of Aberdeen, who have owned for many years an average of 20 to 24 vessels, trading with Australia, China, and India, employing on the average 750 seamen. In thirty-five years their vessels have made about 800 voyages. The firm has generally owned about three-fourths of the interest in their ships. It has not been their practice to insure their interests in their sailing ships, and in respect of steamers they have taken a risk of £10,000 in each steamer "to show our faith in the steamers," insuring the remainder. During the thirty-five years there have been only 3 casualties to their vessels resulting in the loss of life and property, and only 21 lives have been lost. "The principle upon which we work," said Mr. Henderson, a member of the firm, "is that we are not fully insured, and I think that would be a very good principle for every one else to adopt." It is the practice of some steamship companies in their advertisement to state that they do not fully insure their vessels, and they evidently think that this announcement must be an inducement to passengers, as proof that more than ordinary care will be taken in respect of every matter relating to their vessels.

These and other cases which have been brought before the Commission tend to prove, what might be arrived at by *a priori* reasoning from a knowledge of human nature, that there can be no greater inducements to care and prudence and good and safe management of vessels than those derived from self-interest, and from the owner being personally interested in the safety of every ship under his management; that where such is the case the losses are reduced to a minimum, and to whatever extent the ship-owner refrains from insuring his interest he shares in the profits of the underwriter

largely increased by the interest which the ship-owner retains. The converse must be equally true, that where the owner is fully insured against all the consequences of neglect, mismanagement, and recklessness, as well as against those casualties which are really due to chances over which he has no control, there can not, from the very nature of things and from the ordinary motives of human nature, be the same care, the same good management, and the same regard for the safety of the vessel and of all on board of it as where the owner, by bearing a part of the risk, is personally interested.

It is said that this principle of self-insurance can be carried out only in firms or companies which own a large number of vessels, and that any attempt to force such a practice upon the whole trade would limit very much the number of people who would embark in the business of ship-owning, and would therefore prevent a healthy competition.

On the other hand, it may be said with equal truth that a system under which a ship-owner may be relieved from all loss of capital by insuring his ship against every possible eventuality, leads to persons embarking in the business without any practical knowledge, and without sufficient capital to stand against the consequences of their own ignorance and neglect, trading upon borrowed capital, which can only be obtained when secured by full insurances, and results in an undue competition, leading to reckless management in the very matters where a prudent owner who bears a portion of the risk of his adventure would be most careful.

The attention of the Commission has been called to several cases showing how easy it is for men without any capital whatever to enter upon the business of ship-owners, and the hiring or chartering of vessels; and it is stated that in such cases the owners are obliged to run their vessels at a very cheap rate, to keep down every expense, and to load them as deeply as they can, so as to make a profit for those who entrust money to them; and that all this leads to inefficiency and insecurity of life.

The consideration of these arguments leads us to think that no measure would be so fruitful of good to the safety of life and property at sea as one which would compel every ship-owner to bear some share in the risks which his vessel runs. It is not necessary for this purpose that the share should be a large one, especially as in most cases of partial loss he suffers to some extent (*e. g.*, by the loss of time of his vessel), however fully he may be insured, but that there should be some further share in the burthen to the owner caused by the loss or casualty to a vessel few can doubt; while the state of the law which permits profits to result to the ship-owner from losses accompanied by loss of life can not be considered as otherwise than scandalous.

We are of opinion, therefore, that a serious effort should be made to retrace the unwise steps which have been taken by the courts of law, and to reverse the altered practice of ship-owners in late years, with the object of securing that ship-owners shall bear some share in the pecuniary consequences of every casualty which may occur. The process must necessarily be a cautious and tentative one, not interfering too hastily with the established practice of a great trade, and not handicapping too heavily men of small capital, as compared with ship-owners or companies with large capital.

What we have said respecting overinsurance applies in an exceptional degree to vessels owned by single-ship companies. The application of the limited-liability acts in this way appears first to have suggested itself to bona fide ship-owners as a means of avoiding certain liabilities to which the owner of several ships is subject in the course of his business. But such companies are frequently formed of persons who are in no way connected with the shipping interest, and who are induced to take shares by the expectation of high dividends while the ship remains afloat, and the return in full of their money in the event of her being lost, this being secured to them by keeping up the insurance to the insured at her original value of the vessel. We believe that such a reasonable restriction as we propose upon the right to insure would, by discouraging the purely speculative business of most single-ship companies, not only tend to safety, but also indirectly benefit legitimate trade.

The convenience, for the ordinary current business of ship-owners, of valued policies, preventing disputes and litigation, and affording the basis of immediate settlement of losses, is alleged by many witnesses before the Commission to be so great that we are unwilling in the first instance, and until other efforts have been made and have failed, to advise that such valuations should be generally open to question. In fact it is not merely overvaluations which it is desirable to check, but even full valuations; and what the legislature should aim at is to induce every ship-owner to retain some interest in his ship not covered by insurance.

We desire in this view to call special attention to the suggestion which has been made to us by Mr. Janson. He has carried out in his own business a system by which of all partial losses the ship-owner undertakes to bear himself, and to remain uninsured for, an amount equal to 3 per cent. of the valuation in his policy, while the underwriters are only liable for sums in excess of this 3 per cent.; in consideration of this undertaking he allows a considerable reduction in premium. The effect of this

is that if a ship is insured for £10,000 the ship-owner, as now, does not recover for any partial loss under £300, and for any loss above this he has to bear the first £300; if damage is done to the amount of £500 he recovers from the underwriters £200, or if the damage is £1,000 he recovers £700. This system already exists in France. It is the conviction of Mr. Janson that this provision if generally carried out would act upon the owner in all directions; that it would also prevent the need of opening valuations and would check overvaluation. Under this plan the ship-owner, who should overvalue, would increase his own line and his own liability in the case of partial losses; *e. g.*, supposing the ship's real value were £8,000, and the owner valued it at £10,000 in a policy of insurance, the effect of this would be that he would increase from £240 to £300 the amount for which he would be personally responsible in the case of partial losses, and as partial losses are twenty times more numerous than total losses, the owner would always have the inducement to lower the valuation in order to recover as much as possible on partial losses.

We are of opinion that this suggestion is worthy of the consideration of the legislature, and that if adopted it would necessarily lead to every ship-owner retaining some uninsured interest in his ship, but not to such an amount as would seriously hamper him in his business in the event of loss or accident. The percentage which should fall on the ship-owner may require consideration, but we think that if the rule were strictly enforced and efficiently guarded against evasion, 3 per cent. of the valuation which he chooses to place on his vessel would be found to be sufficient.

We think, however, that not only partial losses, but total losses, and all claims on the policy of whatever nature, including claims under the collision clause, should be subject to the deduction.

It has been objected by witnesses of experience that the system will be useless because it will be capable of evasion, either by falsifying the accounts for repairs so as to increase them by the amount which the owner has to bear, or by opening supplemental or honor policies with clubs or others. This difficulty, however, may be met by enacting that in every policy a warranty shall be implied that the assured will remain his own insurer in all respects for the 3 per cent. of the valuation, and by applying to marine insurance the rules which obtain in fire insurance, according to which an assured who knowingly makes a false claim, with intent to defraud, forfeits the whole of his insurance. We think that a provision of this character would be effectual and that it would only inconvenience the small minority of owners who may desire to evade the law or to make fraudulent claims.

We are also of opinion that a change should be made in the law relating to insurance of freight, and that only net freight, that is to say, the freight less advances and less the expenses at the time of loss remaining to be incurred for the purpose of earning it, should be recoverable under any form of insurance on freight. This is the principle on which an owner at present recovers for the loss of his freight from a wrongdoer when his vessel is run down by another vessel. It would follow as a consequence that freight paid in advance should, in the event of the loss of the vessel before its arrival at its destination, be recoverable by the person who has prepaid it, a point on which the law of this country differs from the law of other countries. This would put the shipowner in the same position as if the vessel had performed the voyage; and without such a provision the law might be evaded by requiring payment of the whole or practically the whole freight in advance. No valuation in a policy on freight should be binding, the valuation at a fictitious amount of a mere sum of money to be paid being, we think, quite unnecessary for the purposes of commerce; the ship-owner should be left to prove his loss of freight in each instance, as in collision cases. We further recommend—

(1) That the law of constructive total loss should be amended, and that if the amount for which the ship could be repaired is less than the valuation in the policy the underwriter should be liable only for the amount of such estimate for the repairs.

(2) That the implied warranty of seaworthiness should apply to time policies as well as to voyage policies, and that in both cases the ship-owner should be bound to use all reasonable means to keep his ship in a seaworthy state; but that the warranty should apply to patent and not to latent defects, of which from their nature the owner or his servants or agents can have no knowledge.

(3) That questions of seaworthiness arising out of insurance questions should be tried by a judge with the aid of nautical assessors, and without a jury, except in cases where fraud is alleged.

(4) That all honor policies should, in the future, be not only void but should be prohibited by law, and that the prohibition should be enforced by penalties against both parties. Having regard to the natural unwillingness of parties to such honor contracts to repudiate or facilitate the discovery of such engagements, we think the most effectual penalty would be to make void the ordinary legitimate policies in all cases in which the assured attempts to supplement them by honor policies contrary to the law.

(5) That deviation to save property, as well as life, shall not vitiate an insurance nor expose the ship-owner to liability under bills of lading.

In cases of loss where inquiry takes place before a court, we are of opinion that the court or officer appointed to conduct the inquiry should have power to call for full particulars as to all insurances which have been effected on the vessel, freight, or cargo.

We also recommend the existing statutory right of underwriters to call for particulars of insurances on all interests should be extended to any case in which a claim is made on them, whether an action is pending or not.

(2) *Responsibility of ship-owners to charterers and owners of cargoes.*

By the common law the ship-owner is responsible to the owners of the cargo which his vessel carries for the seaworthiness of the ship and for the negligent acts of the captain, in the absence of any contract to the contrary. But having regard to the supposed peculiar character of the trade, the legislature has for many years given to ship-owners the benefit of an exceptional limitation to such responsibility. They are not liable to an extent exceeding 8*l.* per ton on the registered tonnage for injury to property intrusted to their care or to other ship or their cargoes. They have also an entire immunity from liability for loss by fire. There has also grown up of late years a practice among ship-owners to make large additional exceptions by their bills of lading in respect of their liability.

Mr. Hollams, who has had a large experience as a solicitor in the conduct of shipping cases, says: "In my opinion some of the modern bills of lading are objectionable upon the ground that they free the ship-owner from his ordinary responsibility and thus produce loss of life and loss of property, and on the ground that they are only nominal contracts. They are not contracts really entered into; they are only contracts by a fiction of the law, which holds that a man taking a bill of lading must be presumed to have adopted it. That is a view which has been questioned by eminent judges, but I take it is the acknowledged rule of law. It is not a contract in fact."

The royal commission of 1874 recommended that any provision in a bill of lading or other agreement having for its object or effect to avoid or limit the liability of a ship-owner in respect of goods shipped under it, should have no legal validity if the loss has been occasioned by the ship having been sent to sea in an unseaworthy condition, unless he proves that he or those to whom he commits the management of his business used all reasonable means to make and keep the vessel seaworthy. We are of the same opinion.

We think no ship-owner ought to be relieved by contract or otherwise from the legal obligation to properly equip, man, provision, outfit, and render said ship seaworthy for performing her intended voyage; nor from the legal obligation to properly stow and deliver her cargo as agreed by the terms of shipment (except as to the stowage of chartered vessels loaded under directions of the charterer).

(3) *Responsibility of ship-owners to their seamen.*

By the common law there was no implied contract between a ship-owner and a seaman employed by him on board his vessel that the vessel was seaworthy. The act of 1876 for the first time altered this, and imposed an obligation on the ship-owner towards the seaman that the ship should be seaworthy. It left, however, unaltered the law which restricted the liability of a ship-owner to a seaman for injuries sustained by the latter owing to the neglect or default of others in the same employ. And when in 1880 the law was altered in this respect as regards other laborers, under the employer's liability act, the case of seamen was excepted from the provisions of this act.

The general results of this act of 1880 in respect of other employments, by inducing greater care care by employers and their agents or servants, have been so satisfactory that we feel no hesitation in recommending its extension to seamen, subject to some modifications to meet the special circumstances of ships.

Surveys by the board of trade.

Subject to these various amendments of the law relating to marine insurance, and increasing the responsibility of ship-owners to their seamen and to the shippers of goods, we are of opinion that the discretionary power of detention conferred on the board of trade by the act of 1876 may be entirely dispensed with, except in cases in which the ship is loaded below the statutory mark as hereafter provided.

The board of trade would still be required to continue its present survey of passenger and emigrant vessels, to witness tests for boilers, to measure for tonnage, and to survey all ships for lights, crew spaces, etc.

In the difficult matter of a load line, a technical committee has already recently reported on the subject and has laid down the principle on which the carrying capacity of a vessel may be determined; and the board of trade, in concert with Lloyd's, have since then been acting on this report, and have not detained vessels which are not more deeply laden than in accordance with this rule.

The adoption of this rule has very much simplified the duties of the Board of Trade in this respect.

We think that this rule may now be made the subject of legal enactment, and enforceable by penalty, and we recommend that in addition to the present powers of the Board of Trade for detention, it should be made obligatory on dock companies, captains, and pilots not to let out or take to sea ships loaded deeper than the authorized mark, after allowing for the difference between salt and fresh water.

Application of Board of Trade rules and survey to foreign vessels.

The act of 1876 applied in terms equally to foreign vessels as to British vessels, with this additional provision, that before taking any action in respect of a foreign vessel, the Board of Trade is bound to inform the consular officer of the country to which the foreign vessel belongs, of their intention to detain it. In practice, we are informed by Mr. Gray, that no action has been taken by the board in respect of foreign vessels.

Although it may be possible and even advisable to apply definite rules, such as that with respect to the load line, to foreign vessels as well as to British vessels sailing from our ports, we feel it is of doubtful expediency to invest the Board of Trade officers with any discretionary powers in respect of foreign vessels. Such a course could not be adopted without the almost certain consequence that the same or even greater power will be assumed over British vessels in foreign ports.

For instance, the French law lays down very specific regulations with respect to the manning of vessels sailing under the French flag, regulations which, if enforced on British vessels, would lead to great difficulties. However much, therefore, shipowners may feel that there is a certain inequality of treatment in not giving the same powers over foreign vessels lying in our ports as over British vessels, we believe that in their own interest it is wiser not to assume or to press for such powers. We think that the Board of Trade has acted wisely in endeavoring to secure by negotiation that the same measures shall be applied to foreign vessels by their own Governments and local authorities, rather than by attempting to enforce our regulations upon foreign vessels.

We recommend, therefore, that Her Majesty's Government should take immediate steps to invite a conference of maritime states to consider how far it may be possible to agree on identical rules for the loading of merchant vessels, and also what measures can be mutually agreed on for enforcing such regulations.

Constitution of the Board of Trade.

Complaint has been made to us that the organization of the Board of Trade is not sufficiently in touch with the ship-owners, and while making allowances for the friction which must necessarily arise between a department charged with important duties of supervision and the persons whose proceedings it is required to watch and control, we think it most desirable that the Board of Trade should have additional facilities for conferring with representatives of the ship-owners and availing itself of their experience and advice.

We do not think that any good would result from the creation of a permanent board or council, which would probably cause delay and confusion and is inconsistent with the direct parliamentary responsibility now imposed on the president of the Board of Trade; but we recommend that he should have express statutory power to appoint committees ad hoc to report and advise on the various shipping questions which may arise from time to time, and which seem to require the interference of the Board of Trade.

Inquiries by the wreck commissioner.

We are of opinion that the wreck commissioner's inquiries have been productive of great benefit and have resulted in throwing a great deal of light upon the causes leading to losses of ships and lives.

We think, however, that there is a great force in the arguments that have been brought before us against making the court of inquiry a court of penal jurisdiction also.

We believe that the two procedures may with advantage be kept entirely distinct, and we recommend that in future the Board of Trade should exercise largely the powers conferred by sections 13 and 14 of the merchant shipping act of 1854, and

hold inquiries into losses by their inspectors and surveyors, as is now done by them in the case of railway accidents. The reports of these inquiries should contain a full statement of facts, avoiding as far as possible, matters of opinion, and should be published for general information.

In all exceptionally important cases we recommend that the Board of Trade should order an inquiry before the wreck commissioner, and that this inquiry should be conducted as now, save that the wreck commissioner should confine his report to a statement of the facts of the case, and of the cause of the casualty, and should have no power to withdraw or suspend certificates. Where the result of the inquiry appears to the Board of Trade to justify any interference with the certificates, the Board might refer the question to the local marine board, who should have power to deal with them.

In every case of inquiry a copy of the report should be sent to the Board of Trade and to Lloyd's to be registered by them, and to be open for reference to any ship-owner applying to see it.

Where the question of the conduct of any officer has been referred to the local marine board, and the board reports that blame attaches to such officer for misconduct, and not for mere error of judgment, the finding of the court should be indorsed on his certificate.

We are of opinion that in all classes of marine inquiries on which nautical assessors are engaged, they should be selected with special reference to their acquaintance with the particular class of ship and the voyage in question, and should be persons having recent experience in those matters.

We are also of opinion that whenever a ship comes into port on board which an accident has taken place at sea which has occasioned loss of life, some public judicial inquiry in the nature of an inquest should he held forthwith by an independent judicial officer, who would receive evidence on oath as to the causes by which such accident had been caused. The evidence adduced at such inquiry might give occasion to further proceedings of a criminal character, which would be properly instituted by the director of criminal prosecutions.

Condition and efficiency of officers and seamen of the merchant service.

A large part of the inquiry of the commission has been devoted to the subject of the condition of British and other seamen employed in the merchant service of the United Kingdom. Complaints have been made to us from various quarters that the seamen have deteriorated of late years in quality and condition, and that a larger and undue proportion of foreign seamen are now employed by British ship-owners.

Suggestions have also been made to us to remedy this state of things by the re-establishment of compulsory apprenticeship; of restricting the employment of foreign seamen; of establishing a pension fund for merchant seamen, assisted partly by state grants and partly by a tax on shipping; by the creation of a system of examination for the rating of able seamen; and by compelling the use of records of service of seamen, where their employers may enter remarks on the conduct of the men.

After giving our best attention to the subject we are unable to come to the conclusion that there is any just foundation for the allegations that British seamen have deteriorated in quality. We feel satisfied that ship-owners who offer continuous service at good rates of pay have no difficulty in finding as good seamen as were ever in the merchant service in past times.

The great increase in steamers as compared with sailing vessels has, indeed, produced a marked effect upon the demand for seamen. In proportion to their tonnage steamers employ very much fewer able seamen than do sailing vessels; a large proportion of their crews consist of firemen, stewards, and others. For their able seamen steamers undoubtedly attract the best men into the service, by higher pay, by regular employment, and by lighter work. At the same time they do not train up able seamen in qualities specially necessary for sailing vessels.

On the one hand, therefore, steamers draw off the best hands from sailing vessels; on the other, they do not train young men as seamen.

With respect to the employment of foreign seamen, there has been undoubtedly an increase in the proportion of foreigners of late years. In the report of Mr. Gray it is said that the board of trade statistics show that the ratio of foreign seamen from 1861 to 1876 was 10.1 per cent., and in 1882 to 1884 13.8 per cent., an increase not of a formidable character. This increase has been attributed to various causes; nearly 70 per cent. of the foreign seamen hail from the Scandinavian countries and from Germany, and most of them are sufficiently acquainted with the English language to enable them to understand the orders given to them.

It is almost universally admitted by the witnesses that these men from the north of Europe are excellent seamen. They are alleged to be more submissive to discipline, generally more sober in their habits, and more careful in keeping their engagements than British seamen generally to be found in sailing vessels; but there is also

a general concurrence that British seamen, even when inclined to be unruly in ordinary times, have, in times of emergency and danger, courage, coolness in the presence of danger, and resources which are not to be found equally in their more submissive mates from abroad.

The process of substitution of steamers for sailing vessels, which has recently been going on in the trade of the north of Europe, has driven many seamen from those parts to seek employment in our merchant service, and hence the competition; they get the same wages as British seamen, but it is alleged that they sometimes make it worth while to the persons who find crews for vessels to recommend them in preference to British seamen.

We think it unnecessary to quote from the opinions of ship-owners which have been collected and printed in Mr. Gray's report. It appears that few foreigners are employed by the larger steamships in regular trades or in the home and coasting trades; but there are considerable numbers employed in sailing vessels on voyages. Of a list of 35 sailing vessels and 35 steamers, employed in foreign trade, it appeared that the proportion of foreign seamen on the sailing vessels was 26.58 per cent. and on the steamers 8.5 per cent., and of the foreign seamen 68 per cent. hailed from the north of Europe.

In view of all the facts of the case we are unable to advise any interference by law with the employment of foreign seamen.

It may be doubted whether, if American vessels are taken into account, it would not be found that there are more British seamen to be found on board foreign vessels than of foreign seamen on board British vessels. In any case the proportion of foreign seamen on board our vessels has not reached the point at which even those who suggest interference think the limit should be placed. It would be well, however, that British seamen should generally understand the causes which influence some ship-owners in the employment of foreign seamen, and that however ready owners are to acknowledge the great qualities which are a tradition in the British seaman, yet that submission to discipline, a readiness to keep engagements, and sobriety are qualities in which some employers believe that the north of Europe seamen are superior to the British seamen they can engage for their vessels except for continuous employment.

With respect to apprenticeship, it appears that the system has almost entirely ceased to exist as a means of training men who are intended to be seamen only. Those who are now apprenticed are mainly, if not wholly, lads who hope and intend to rise to the position of officers of the merchant service. Able seamen are now recruited from those who are entered on board ships as boys or ordinary seamen, receiving wages as such. Although the conversion into steam of so large a part of the coasting and foreign trade limits very much the means of training young men as able seamen, yet we have no reason to believe that the supply will fail.

There has been an enormous increase of late years of the larger class of fishing vessels, where young men learn the art of handling fore and aft sails, and steering, and whence competent men can be attracted to other services in merchant ships. Those who recommend compulsory apprenticeship appear to have forgotten that it existed by law between the years 1844 and 1849, during which time a vast number of apprentices were bound to service in merchant vessels, but that the system had to be abandoned in the latter year, owing to the abuses which it had given rise to. In the present day there would be far greater difficulty in re-establishing such a system. It would be absurd to call upon steamers to carry apprentices whose services they do not want, and where the apprentices would learn nothing of use for service in sailing ships; and to levy a tax on steamers in aid of such a system, to be carried out on sailing vessels only, would subject British steamers to an impost which it would be impossible to levy on foreign steamers.

In 1844 it was also made compulsory on seamen to carry with them a record of their services, similar to what is the case with many foreign seamen; in 1853 the provision which was then unpopular with the men was repealed.

Your commissioners have received much evidence on behalf of petty officers and seamen in the merchant service to the effect that they would like to have certificates of their classes based upon definite qualifications, and that it would also be desirable to establish a continuous record of service.

With respect to the rating of "able seamen," it is now the law that no man is entitled to be so rated unless he can prove four years' service at sea before the mast. There is, however, great laxity in this respect; men are constantly rated as "A. B." without any inquiry as to their past services and with insufficient qualification. Practically it rests with the masters of vessels whether to rate them as such or not. Nor does it appear to us that there is any certain method by which this can be prevented. We think, however, that a voluntary system of examination might with advantage be established by which through the local marine boards, and after a single examination in practical seamanship, men might obtain certificates as "able seamen." We are also of opinion that the system of examination and certificates, which now

applies only to the cases of masters and officers, might with advantage be extended to boatswains and carpenters, the examination in this case being of a character suited to the duties of these classes.

Lastly, we recommend that all A. B.'s should be required to have a continuous record of services, with such securities as may prevent fraudulent transfer.

With respect to the establishment of a pension fund, no definite scheme has yet been devised of a practical character which will bear financial criticism. But some of the representatives of the ship-owners, in giving evidence before this Commission, have stated that they are willing to be largely taxed towards the maintenance of such a fund with a view to bring about that cordial relationship which should exist between the employer and the employed, and to avoid the loss of time and annoyance which they allege would arise from the application of the employers' liability act to an exceptional trade.

It is very easy to suggest a scheme by which seamen should contribute the small sum of 1*s*. a week to entitle them, at the age of 50 or 60, to a pension of 10*s*. to 12*s*. a week; but it will be found on examination that 1*s*. a week would be a contribution wholly inadequate for the purpose, and that the scheme would necessitate very large contributions from the State and from ship-owners. Difficult questions would also arise as to whether those who have contributed to this fund for a few years should lose their claim to the pension on leaving the merchant service; and whether foreign seamen should be compelled equally with British seamen to contribute to it.

The board of trade has done excellent work of late years in encouraging seamen to habits of saving and thrift by affording them means of remitting their wages home, and of investing them in savings banks, and in preserving them, on arriving at home from long voyages, from the bad influence of crimps and others who are so eager to relieve them of their cash. The efforts of the board, through what is known as the "Midge" system, by which homeward-bound vessels are boarded by agents of the Government before the crimps are able to effect their objects, and the seamen are persuaded to remit their wages to their relatives, or to place them in security, have been productive of immense benefit to the men. We think that similar powers should be entrusted to the officers of the board in respect to outward-bound vessels, with the object of saving the seamen from the mischievous influences of the crimps.

Much as has been done in England of late years to save seamen from the evil effects of the crimping system, we find that in many foreign ports, and especially in those on the western coast of America, this system is still in existence, and results in great harm to seamen and to the merchant service. Seamen are often induced to desert their vessels, and the shipping of useless substitutes is a source of great danger to British vessels.

We think that much may be done by negotiation with other Governments to secure protection to the merchant service from these evils.

We find it necessary to point out that the provision passed by Parliament in the year 1880, for the abolition of advance notes, has proved to be quite ineffectual. A system has been devised under which the seamen engage at nominal wages at 1*s*. per month for one or two months after the commencement of the voyage, and a note is given by the ship-owner for the difference between the nominal and real wages, which is payable a few days after the ship has sailed if the seaman has really shipped. This note is cashed by the boarding-house keeper or crimp at a very heavy discount, and the seaman is thus able to obtain an advance at a considerable sacrifice.

It is very doubtful whether these notes are legal. The ship-owner, however, does not in practice dispute the note if the seaman performs his engagement and ships in the vessel. There is no practical distinction, therefore, between these "bonus notes" and the old advance notes except this, that the deduction made from the amount received by the seaman is far greater than it used to be.

It appears to us that the growth of this new practice shows that it is almost impossible to dispense altogether with a system under which seamen can obtain some advance of their wages before proceeding to sea, and out of which they can procure new kits and other necessaries.

We believe it will be the wisest course to recognize this necessity, and to legalize advance notes, limiting them in all cases to the amount of one month's wages.

We have already, in the previous part of our report, advised the extension of the employers' liability act to seamen. The measures which we have proposed in the interest of saving life at sea will also, we believe, tend greatly to the advantage of seamen. Any means adopted, within reasonable bounds, to increase the responsibility of ship-owners for the safety of their ships, must also enure to the benefit of all on board. It will become more important for ship-owners to be careful in the selection of the officers and men they employ, and there will be better and more continuous demand for the best men in the service, and a gradual weeding out of it of those who, by the want of qualifications or bad conduct, give rise to complaints and to invidious comparisons with the seamen of other countries, to which our attention has been called.

Our attention has been called to the difficulties and dangers which are said to result from some points in connection with the rule of the road at sea. We have not thought it necessary to pursue this question further. We have also refrained from entering upon some other points of detail with regard to the saving of life at sea, such as the appliances of life-buoys, rafts, boats, etc., as a select committee of the House of Commons has been appointed to consider and report on these questions. We have considered that our report should be mainly devoted to the great principles underlying the relation of the Government to the merchant service. It is our opinion that the safety of life and property at sea will be best promoted not by extending the functions of the Government, so as to regulate every point of detail in connection with the building, manning, loading, and management of ships, but by increasing and enforcing the responsibility of those who are concerned in the adventure and who derive profit from it, and by preventing them from ridding themselves from every consequence resulting from their negligence or ignorance.

Finally, we think it right to say that, although we have been unable to resist the conclusion that the loss of life and property at sea is excessive, and is due to a considerable extent to preventible causes, yet we believe that never at any time in the history of the British mercantile marine has there been so great an improvement as in recent years in the construction of vessels of the first quality, or a greater degree of safety to life and property in the vessels of the better class sent to sea.

SUMMARY OF RECOMMENDATIONS.

We will conclude by recapitulating the points on which we desire to submit formal recommendations.

We recommend—

(1) That the law of marine insurance should be revised with the object of securing that everyship-owner insuring his vessel should retain some uninsured interest in it; that for the present and tentatively this interest should be secured by a provision that all claims on the policy, whether for partial or total loss, should be subject to a deduction equal to 3 per cent. of the value which the owner chooses to place on his ship.

(2) That with the object of securing this there shall be implied in every policy a warranty that the insurer will remain his own insurer in all respects for the 3 per cent. of the valuation, and that a person knowingly making a false claim should forfeit the whole of the policy.

(3) That in insurance on freight the net freight only, that is to say, the freight less advances and less the expenses at the time of the loss remaining to be incurred for the purpose of earning it, should alone be recoverable under any form of insurance on freight; and that no valuation of freight in a policy should be binding.

(4) That the law of constructive total loss should be amended; and that if the amount for which the ship could be repaired is less than the valuation in the policy the underwriter should be liable only for the amount of such estimate for the repair.

(5) That the implied warranty of seaworthiness should apply to time policies as well as to voyage policies, and that in both cases the ship-owner should be bound to use all reasonable means to keep his ship in a seaworthy state; but that the warranty should apply to patent and not to latent defects, of which, from their nature, the owner or his servants or agents can have no knowledge.

(6) That questions of seaworthiness in insurance cases should be tried by a judge, with the aid of nautical assessors and without a jury, except in cases where fraud is alleged.

(7) That all the honor policies should be not only void, but should be prohibited by law, and that the prohibition should be enforced by penalties against both parties.

(8) That where honor policies have been taken out the ordinary legitimate policies should also be void.

(9) That deviations to save property, as well as life, should not vitiate any insurance, nor expose the ship-owner to liability under bills of lading.

(10) That in cases of loss where inquiry takes place, the court should have power to call for full particulars as to all insurances which have been effected on the vessel, freight, or cargo.

(11) That the existing statutory right of underwriters to call for particulars of insurance on all interests should be extended to every case in which a claim is made on them, whether an action is pending or not.

(12) That any provision in a bill of lading or other agreement having for its object or effect to avoid or limit the liability of a ship-owner in respect of goods shipped under it should have no legal validity if the loss has been occasioned by the ship having been sent to sea in an unseaworthy condition, unless he proves that he or those to whom he commits the management of his business used all reasonable means to make or keep the vessel seaworthy.

(13) That the employers' liability act of 1880 should be extended to seamen.

(14) That the discretionary power conferred on the board of trade to detain vessels should be dispensed with, except in cases where the ship is loaded below the statutory mark.

(15) That the load line recommended by the commission on that subject, and now acted upon by the board of trade and Lloyd's, should be made the subject of legal enactment, enforcible by penalty.

(16) That Her Majesty's Government should take steps to invite a conference of maritime states to consider how far it may be possible to agree upon identic rules for the loading of merchant vessels, and also what measures can be mutually agreed on for enforcing such regulations.

(17) That the president of the board of trade should have statutory power to appoint committees of experts to advise the board on various shipping questions, which may arise from time to time, and which may seem to require the interference of the board.

(18) That in inquiries by the wreck commissioner or by magistrates, the report should in future be confined to a statement of the facts of the case inquired into and the cause of the casualty.

(19) That where it appears to the board of trade that the result of such inquiry justifies interference with the certificates of any officers of the vessel, which is the subject of inquiry, the board should refer the question to the local marine board.

(20) That a copy of the report in any inquiry should be registered at the board of trade and at Lloyd's, and be open for reference to any ship-owner applying to see it.

(21) That where a local marine board reports that blame attaches to an officer for misconduct, and not for mere error of judgment, the finding of the court should be indorsed on the certificate of the officer.

(22) That in all cases in which nautical assessors are engaged, they should be selected with special reference to their acquaintance with the particular class of ships and the voyage in question, and should be persons having recent experience in these matters.

(23) That whenever a ship comes into port, on board of which an accident involving loss of life has taken place at sea, some inquiry in the nature of an inquest should be forthwith held by an independent judicial officer.

(24) That a simple professional examination should be required for the rating of boatswains and carpenters.

(25) That seamen with the rating of A. B. should be required to have continuous records of their services.

(26) That powers similar to those now conferred on the Board of Trade in the case of vessels arriving in our ports on their homeward voyage, for the purpose of preventing crimping, should be conferred on them in the case of outward-bound vessels.

(27) That negotiations should be undertaken by Her Majesty's Government with other powers for the purpose of securing our seamen in foreign ports against the evils of crimping.

(28) That advanced notes should be legalized, but strictly limited in all cases to the advance of one month's wages.

All which we humbly submit to Your Majesty.

G. SHAW-LEFEVRE, *Chairman.*
J. CHAMBERLAIN.
A. COOPER KEY.
EDWARD HENEAGE
CHARLES P. BUTT.
WM. PEARCE.
JOHN E. GORST.
HY. WATSON PARKE
JOHN ASTE.
T. C. BARING.
THOS. BURT.
HENRY GREEN.
JAMES KENNEDY.
JAMES MCGREGOR.
T. B. ROYDEN.
LAWRENCE D. SMITH.
LEONARD C. WAKEFIELD.
W. WALTON.
JOHN WARRACK.

R. ANDERSON, *Secretary.*
27th August, 1887.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 63.

REDUCTION OF INDIAN RESERVATIONS.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A communication from the Secretary of the Interior, with accompanying papers, relating to the reduction of Indian reservations.

JANUARY 9, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a communication of 30th December, 1887, from the Secretary of the Interior, submitting, with accompanying papers, two additional reports from the Commission appointed to conduct negotiations with certain tribes and bands of Indians for reduction of reservations, etc., under the provisions of the act of May 15, 1886 (24 Stats., 44), providing therefor.

GROVER CLEVELAND.

EXECUTIVE MANSION,
January 9, 1888.

DEPARTMENT OF THE INTERIOR,
Washington, December 30, 1887.

The PRESIDENT:

Under the respective dates of January 11 and February 17, 1887, I had the honor to submit to you for transmittal to Congress two separate reports received by this Department through the Commissioner of Indian Affairs from the Commission commonly known as the Northwest Indian Commission, appointed under the provisions of the act of May 15, 1886, to negotiate with certain Indian tribes in Minnesota and the Northwest Territories (24 Stats., 44).

Those two reports, with their accompanying correspondence, which may be found in Senate Ex. Docs. No. 30 and No. 115, Forty-ninth Congress, second session, relate, the first to an agreement made with the Arickaree, Gros Ventre, and Mandan Indians residing upon the Fort Berthold Reservation in Dakota, and the other to two agreements made with certain of the Chippewa Indians in the State of Minnesota.

I now have the honor to submit herewith two additional reports made by the said commission, with the accompanying letter of the Commissioner of Indian Affairs forwarding them to the Department, with five agreements made with various tribes and bands of Indians in the Northwest, viz: The Gros Ventre, Piegan, Blood, Blackfeet, and River Crow Indians upon the reservation commonly known as the Great Blackfeet Reservation in northern Montana; the Upper and Middle bands of Spokane Indians; the Cœur d'Alene Indians; the Pend d'Oreille or Calispel Indians; the Indians upon the Jocko Reservation in Montana.

The Commission report that they visited the Bois Forte and Grand Portage Reservations in Minnesota and held council with the bands thereon, but failed to secure their acceptance of or consent to the agreements made with the other Chippewas on September 7, 1886.

The five agreements now presented, together with the three heretofore reported, complete the work of negotiation so far as it could be accomplished by the Department with the tribes and bands of Indians for which provision was made in the act of May 15, 1886.

The Commissioner of Indian Affairs in his report, herewith, reviews at some length the provisions of each of the accompanying agreements, which may be briefly though very generally summarized, as follows:

The agreement with the Indians in northern Montana provides for the cession to the United States of over 17,500,000 acres of the large reservation now occupied by them, estimated to contain 21,651,000 acres, for a consideration of $4,500,000, to be expended for the benefit of the Indians in manner therein provided, in ten annual installments, so far as may be required; any excess above such requirements to be placed in the Treasury to their credit, etc. The unceded portion of the reservation to be divided into three separate reservations, whose boundaries are given, for the Indians belonging to the three agencies located therein.

The Upper and Middle bands of Spokane Indians, in the agreement with them, relinquish to the United States any right, title, and claim which they now have or ever had to any and all lands lying outside of the Indian reservations in Idaho and Washington Territories, and agree to remove to the Cœur d'Alene Reservation in Idaho, except such as prefer to go to the Jocko Reservation, in Montana, the consideration being $95,000, to be expended for their benefit in manner as specified in the agreement.

The Cœur d'Alene Indians, in the agreement made with them, relinquish to the United States, for the consideration of $150,000, to be expended for their benefit, etc., all right, title, and interest they now have or ever possessed to and in any lands outside the limits of their present reservation in the Territory of Idaho; they also agree to the removal to and settlement upon their reservation of the Upper and Middle bands of Spokane Indians, the Calispels (Pend d'Oreilles) now residing in the Calispel Valley, and to any other bands of non-reservation Indians belonging to the Colville Agency, Washington Territory, etc.

The Pend d'Oreille or Calispel Indians, in agreement made with them, relinquish all right, title, and claim they have or ever had to lands in Idaho or Washington Territories or elsewhere, and agree to remove to and settle upon the Jocko (Flathead) Reservation, in Montana, except such as may prefer to go to the Colville Reservation, in Washington Territory, or to the Cœur d'Alene Reservation, in Idaho Territory; the consideration being the erection of saw and grist mill, building houses for Indians, clearing and breaking lands, etc.

The Indians on the Jocko (Flathead) Reservation, in the agreement with them, consent to the removal to and settlement upon their reser-

vation of the Upper and Middle Spokanes and Pend d'Oreilles; the consideration being the erection on the reservation for the Indians, by the United States, of a saw and grist mill, and providing a blacksmith and tools, etc.

The law under which these negotiations have been conducted provides that "no agreement shall take effect until ratified by Congress."

The Commissioner of Indian Affairs in his report herewith expresses the opinion that these agreements are just and favorable alike to the Government and to the Indians. He recommends their speedy ratification, and submits estimates of the various amounts required to be appropriated at this time by Congress to carry out the terms of the negotiations, which will be found on the concluding pages of his report.

By these negotiations a very large area of land now in state of reservation for Indian purposes, being the excess of quantity needed for the actual use of the tribes and bands for whom it has been held in reservation, is placed at the disposal of the United States so that it may be opened to settlement in such manner as Congress in its wisdom may direct; and further, the adjustment of claims asserted by Indians to large portions of land in Washington and Idaho Territories, now largely occupied by settlers, is provided for. When these negotiations shall have been fully ratified they will remove some serious hindrances to the contentment, the permanent settlement, and the more rapid advancement in civilization of the tribes and bands who are parties thereto. The money necessary to be appropriated for their support and to assist them forward in the ways of civilization will not be, as heretofore, so largely a gratuity from the Government, but will go to them by judicious expenditures as consideration for valuable rights and claims which they have ceded and relinquished to the Government.

For these and other like reasons I concur in the recommendation of the Commissioner that the agreements be speedily ratified.

I have the honor to be, very respectfully, your obedient servant,

L. Q. C. LAMAR,
Secretary.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, December 13, 1887.

SIR: Referring to office reports, dated January 8 and February 11, 1887, respectively, transmitting two separate reports of the Northwest Indian Commission and accompanying agreements made with the Arickaree, Gros Ventre, and Mandan tribes of Indians occupying the Fort Berthold Reservation, in Dakota, and the Chippewa Indians in Minnesota, which reports, agreements, and accompanying papers form the subject-matter of Senate Ex. Docs. No. 30 and 115, respectively, Forty-ninth Congress, second session, I now have the honor to transmit herewith duplicate copies of two additional reports of said Commission and accompanying agreements (five in all) made with the several tribes in northern Montana, occupying the Gros Ventre, Piegan, Blood, Blackfeet, and Crow River Reservation, commonly known as the Great Blackfeet Reservation, and the Upper and Middle bands of Spokane Indians, the Pend d'Oreilles, or Calispels, and the Cœur d'Alenes in Idaho, and the Flathead, Pend d'Oreille and Kootenai Indians of the Flathead Reservation in Montana. These reports are dated, respectively, February 11 and June 29, 1887.

The authority under which these several agreements were negotiated is found in the Indian appropriation act, approved May 15, 1886 (24 Stats., p. 44), which reads as follows:

To enable the Secretary of the Interior to negotiate with the several tribes and bands of Chippewa Indians in the State of Minnesota for such modification of existing treaties with said Indians and such change of their reservations as may be deemed desirable by said Indians and the Secretary of the Interior, and as to what sum shall be a just and equitable liquidation of all claims which any of said tribes now have upon the Government; and also to enable said Secretary to negotiate with the various bands or tribes of Indians in northern Montana and at Fort Berthold, in Dakota, for a reduction of their respective reservations, or for removal therefrom to other reservations; and also to enable said Secretary to negotiate with the Upper and Middle bands of Spokane Indians and Pend d'Oreille Indians, in Washington and Idaho Territories, for their removal to the Colville, Jocko, or Cœur d'Alene Reservations, with the consent of the Indians on said reservations; and also to enable said Secretary to negotiate with the Cœur d'Alene Indians for the cession of their lands outside the limits of the present Cœur d'Alene Reservation to the United States, $15,000, or so much thereof as may be necessary, to be immediately available; but no agreement shall take effect till ratified by Congress.

THE AGREEMENT WITH THE INDIANS IN NORTHERN MONTANA.

Briefly stated, the agreement concluded with the various bands or tribes occupying the Great Blackfeet Reservation, in northern Montana, provides for the cession to the United States of by far the greater part of that vast reservation lying along the international boundary and extending east to the Dakota line and west to the summit of the Rocky Mountains, with the Missouri and Marias Rivers and Birch Creek for its southern boundary, estimated to contain 33,830 square miles, or 21,651,000 acres—an area three times as large as that of Maryland, larger than the State of Indiana, almost as great as that of South Carolina, and greater than the New England States, leaving out the State of Maine.

According to the report of the Commission, the territory ceded to the United States under the agreement embraces an area of about 17,500,000 acres—more than three-fifths of the entire reservation.

The remaining unceded lands are divided into three separate reservations—one for the Indians now attached to the Fort Peck Agency, one for the Indians attached to the Fort Belknap Agency, and the third for the Indians attached to the Blackfeet Agency.

It might be proper to state here that the Great Blackfeet Reservation is at present claimed and held in common by the Indians of the three above-named agencies, no division of the territory ever having been made by competent authority; hence the negotiations were conducted alike with all, and but one agreement was executed with the several bands.

The three separate tracts reserved by the Indians for their future homes are situated as follows: The Fort Peck Reservation, on the Missouri River, north side, from Porcupine Creek to the Big Muddy, and extending north 40 miles. The Fort Belknap, on Milk River, south side, from the mouth of Snake Creek to the mouth of People's Creek, and extending south to the summit of the Little Rockies. The Blackfeet, in the extreme western part of the present reservation, extending from the Cut Bank to the summit of the Rocky Mountains, and from Birch Creek to the British Possessions.

The descriptions given are only general; for a more particular definition of the respective boundaries reference should be had to the agreement.

The tribes or bands for whom the several separate reservations are made retain no interest whatsoever in any reservation other than the one set apart for their separate use and occupation respectively.

The compensation agreed upon for the cession of their surplus lands is as follows:

For the Indians of the Fort Peck Agency, $165,000 annually for ten years; for the Indians of Fort Belknap Agency, $115,000 annually for ten years, and for the Indians of the Blackfeet Agency, $150,000 annually for the same period, the money to be expended for the purchase of cows, bulls, and other stock, goods, clothing, subsistence, agricultural and mechanical implements; in providing employés; in the education of Indian children; in procuring medicine and medical attendance; in the care and support of the aged, sick and infirm, and helpless orphans of said Indians; in the erection of such new agency and school buildings, mills, blacksmith, carpenter, and wagon shops as may be necessary; in assisting the Indians to build houses and inclose their farms, and in any other respect to promote their civilization, comfort, and improvement.

It is also agreed that in the employment of farmers, artisans, and laborers preference shall in all cases be given to Indians residing on the reservation who are found to be well qualified for such employment.

The sale, exchange, or slaughtering of cattle issued to the Indians for breeding purposes, or their increase, except by consent of the agent in charge, is prohibited, but the Commissioner of Indian Affairs may remove such restriction.

It is further agreed that whenever, in the opinion of the President, the yearly installments of $165,000, $115,000, and $150,000 shall be more than is required to be expended in any one year in carrying out the stipulations of the agreement, so much thereof as may be in excess of the requirement shall be placed in the Treasury to the credit of the Indians, and expended in continuing the benefits of the agreement after the ten years during which the installments are to run shall have expired.

In the distribution of cattle and other stock, goods, clothing, subsistence, and agricultural implements preference is to be given to Indians who endeavor by honest labor to support themselves, and especially to those who in good faith undertake the cultivation of the soil, or the raising of stock as a means of livelihood. Suitable provision is made for the protection of Indians whose homes fall within the ceded territory and for the survey and marking of the outboundaries of the diminished reservations, the cost of such survey to be paid for out of the first installments appropriated.

Right of way is secured for railroads, wagon-roads, and telegraph lines whenever, in the opinion of the President, the public interests require their construction through either of the three separate reservations.

It is the deliberate judgment of the Commissioners that these Indians are not as yet prepared to take lands in severalty, and they are equally positive that even if they were so prepared the country occupied by them is wholly unsuited for that experiment.

As the subject is one of special interest, in view of the policy of the Government to allot lands in severalty to Indians whenever and wherever practicable, I quote the following from their report:

Neither of these bands are as yet prepared to take lands in severalty. Indeed, the country occupied by them is not suitable for that experiment. It is in no sense a good agricultural country, and it would be a very difficult matter, if not impossible, for a white man to make a living there if confined strictly to the cultivation of the soil.

Montana, aside from its mineral resources, is essentially a stock-raising country, the northern portion of it especially being but poorly adapted to anything else; hence it is that stock-raising has become the principal industry of the people. The frequent failure of crops, owing to the aridity of the soil, renders farming not only unprofitable but uncertain as a means of support; therefore, if the Indians in northern Montana are ever to become self-supporting they must follow the pursuits which the whites by long experience have found the country best adapted to—cattle, sheep, and horse raising. This need not, and should not, be to the entire exclusion of farming, but it should become their chief industry and dependence.

It can be said positively that the Fort Peck Indians can never become self-supporting where they now are through the cultivation of the soil alone; but there can be no doubt that with proper encouragement they would soon reach that position as stock-growers. Stock-herding is suited to their tastes; they are willing to work, and realize the necessity of doing for themselves; and it is but right and just that their efforts should be encouraged and directed in a way that will be most likely to advance their civilization and happiness. Furthermore, it is absolutely certain that unless they have cattle given them and become stock-raisers the Government will be obliged to support them for all time, or allow them to starve.

Holding to these views, we have made provision in the agreement with them to enable them to become self-supporting as a pastoral people. The reservation set apart for them is ample, but not too large, and was selected with that end in view. The consideration agreed upon for the cession of their surplus lands will be sufficient to provide them with cattle, sheep, and other stock for a successful start in that direction, and to subsist and otherwise care for them, until they are able to support themselves without aid from the Government. * * *

The promise of stock cattle was the principal inducement which led to the cession of the vast territory relinquished to the Government. * * *

What has been said in regard to the policy to be pursued with the Fort Peck Indians is equally true in respect of the Fort Belknap and Blackfeet Agency Indians. They must be encouraged in stock-raising as well as in agricultural pursuits. They never can become self-supporting in any other way.

There are not less than 2,300 Sioux and about 1,100 Assinaboines at the Fort Peck Agency, for whom the reservation on the Missouri between Porcupine Creek and the Muddy was set apart. The question of the advisability and practicability of removing the Sioux to the Great Sioux Reservation in Dakota was thoroughly considered by the Commissioners, and the decision reached that it was not advisable to make any attempt in that direction. The Indians themselves were firmly opposed to such change of residence and manifested a good deal of surprise and uneasiness at the mere suggestion of it by the Commissioners. They claim equal rights with the other Indians in the Great Blackfeet Reservation, which claim was not disputed by either of the other bands. The Government placed them there nearly a quarter of a century ago, and by long residence they have become greatly attached to the country and could not be easily persuaded to abandon it.

The Sioux are settled in the immediate vicinity of the agency, and the Assinaboines mainly at Wolf Point, about 20 miles west, on Wolf Creek.

The reservation for these two bands was selected with special regard to convenience, utility, and capacity for stock-raising, for, as has already been said, the promise of stock cattle was the principal inducement with all the tribes or bands which led to the cession of the vast territory ceded by them to the Government.

The Commissioners report that the agreement with the Fort Peck Indians was satisfactory alike to the Indians and their friends present during the progress of the negotiations, and they express the belief that if strictly carried out the Indians will require no further aid from the Government.

The Fort Belknap Agency Indians were unwilling to remove either to Fort Peck or any other distant point, but consented unanimously to remove from their present locality near Fort Assinaboine to the reservation selected for them east of Snake Creek and between Milk River

and the Little Rockies. The Commissioners describe the new selection as affording the best lands for agricultural purposes in all that region of country. It is well watered, they say, and susceptible of irrigation at a small cost. Besides, it is admirably adapted to stock-raising. Timber is plenty for needed agency buildings and Indian houses.

They refer to the proximity of the present habitations of the Indians to the military post of Fort Assinaboine, and the baneful influence of such close contact upon the health and morals both of the garrison and Indians. This evil, in the opinion of the Commissioners, can only be remedied by removing the Indians further from the post, as in the agreement provided. There are about 1,700 Indians at Fort Belknap Agency—Assinaboines and Gros Ventres, the latter only slightly outnumbering the former.

The Indians of the Blackfeet Agency, the last visited, appear to have been more exacting in their demands than any of the other Indians. The Commissioners observe that it was very evident from the beginning of the negotiations that they had been tampered with by designing white men whom they found at the agency, and who hoped to gain some advantage to themselves in one way or another. Their chiefs complained of ill-usage and bad faith on the part of the Government in times past, and the negotiations were considerably delayed by their unreasonable and persistent demands.

Finally, however, they consented to the agreement as already executed by the Indians of the other two agencies, and selected the reservation heretofore described.

In explanation of the apparent disproportion in the sums agreed upon as compensation for the ceded territory, between the Indians of this and the other two agencies, the Commissioners state that the needs of the Blackfeet Indians are proportionally greater than the others, and that there are from 500 to 1,000 Indians on the other side of the international line who may properly be regarded as belonging to the Blackfeet Agency, and are likely sooner or later to return to the agency; and, furthermore, they believe that they (the Blackfeet Agency Indians) have the most ancient claim to the ceded territory, having occupied it as far back as their history is known.

In closing their report upon the agreement with the Indians of the Great Blackfeet Reservation, the Commissioners observe as follows:

> What has been said in regard to the policy to be pursued with the Fort Peck Indians is equally true in respect of the Fort Belknap and Blackfeet Agency Indians.
>
> They must be encouraged in stock-raising as well as in agricultural pursuits. They can never become self-supporting in any other way. * * *
>
> The execution of the agreement with the Piegans, Bloods, and Blackfeet concludes our labors with the Indians in northern Montana. * * *
>
> We have made every possible effort looking to the conclusion of this work in time to get it before Congress, if it should so please the Department, during the present session, and we trust that it is not yet too late. No human foresight could have accomplished more. We have traveled night and day in open vehicles during a period of cold weather which will be memorable in the history of Montana, and without a day's delay that could possibly have been avoided.

AGREEMENT WITH THE UPPER AND MIDDLE BANDS OF SPOKANE INDIANS.

Early in March, 1887, negotiations were opened with these Indians for their removal to the Colville, Jocko, or Cœur d'Alene Reservations, as contemplated in the act aforesaid. They are scattered over the country in the neighborhood of Spokane Falls. The Commissioners found them poor, and for the most part residing upon almost barren lands.

They are addicted to strong drink and gambling, and the majority of them spend their lives hanging about Spokane Falls, either begging or performing menial services for the whites. In all their travels the Commissioners found no Indians so utterly degraded and helpless.

The Commissioners were strongly impressed with the wrongs these people have suffered in times past by having their lands gradually wrested from them without compensation in any form.

When the treaties of 1855 were made with the various tribes east of the Cascade Mountains, these Indians were passed by, although they had just as good a claim to recognition as any of the tribes treated with. They laid claim to a large area of country then occupied by them, which has gradually been settled upon by the whites until it has all passed from their hands. The object of the recent negotiations was to obtain a relinquishment from them of all claim against the Government on account of lands thus taken from them, to pay them a fair consideration for such relinquishment, and to effect their removal and settlement upon one of the existing neighboring reservations, with the consent of the Indians already occupying such reservation.

As the result of the negotiations, said Indians—the Upper and Middle bands of Spokanes—agreed to relinquish to the United States any right, title, or claim they now have, or ever had, to lands in Idaho and Washington Territories, and to remove to the Cœur d'Alene Reservation in Idaho. A few expressed a preference for the Jocko Reservation in Montana, and it was accordingly agreed that any who so desired should be permitted to settle on said reservation, and have their pro rata share of the benefits provided in the agreement.

At first they strongly insisted upon having a reservation established for them on the Little Spokane River, but when shown that their request could not be complied with under the terms of the act providing for the negotiations, they concluded to accept the proposition to remove to the Cœur d'Alene and Jocko Reservations.

The consideration agreed upon for the cession of the lands claimed by them was $95,000, to be expended in the erection of houses, in assisting them in breaking land, in the purchase of cattle, seeds, agricultural implements, saw and grist mills, clothing, subsistence, in taking care of the aged, sick, and infirm, in providing educational facilities, and otherwise to promote their civilization and well-being—$30,000 the first year, $20,000 the second, and $5,000 per annum for eight years thereafter. The balance of $5,000 is to be expended in encouraging farm labor, as stipulated. It is also agreed that the United States shall pay to each of the six chiefs of the tribe $100 per annum for the period of ten years.

The Indians are to be permitted to select their homes on the Cœur d'Alene Reservation from a tract of land to be laid off and surveyed for the purpose, without, however, interfering with the lands now occupied by the Cœur d'Alene Indians, and they agree to take allotments as provided in the recent act of Congress known as the general allotment act.

By a further provision it is agreed that any Indian who has settled and made improvements upon the public domain, with the intention of acquiring title to the same under the laws of the United States relating to public lands, may continue to occupy the same, and acquire title thereto.

There are other minor provisions calculated to benefit and improve the condition of the Indians.

The Commissioners report that many of the Indians are anxious to remove at once to their new homes, and they strongly urge the speedy ratification of the agreement.

AGREEMENT WITH THE CŒUR D'ALENE INDIANS.

These Indians also lay claim to a large tract of country in Washington, Idaho, and Montana Territories, by right of original occupancy, and, as we have seen, the act authorized negotiations with them "for the cession of their lands outside the limits of the present Cœur d'Alene Reservation to the United States."

By the terms of the agreement made with them, the Indians cede and relinquish to the United States all right, title, and interest they now have or ever possessed in any lands outside the limits of their present reservation.

They also agree to the removal and settlement upon their reservation of the Upper and Middle bands of Spokane Indians, upon the terms and conditions agreed upon with said Spokane Indians, and also to the removal and settlement there of the Calispels (Pend d'Oreilles) now residing in the Calispel Valley, and any other band of non-reservation Indians belonging to the Colville Agency, upon terms agreed upon with any such bands.

In consideration of the foregoing, it was agreed that the Cœur d'Alene Reservation shall be forever held as Indian lands, for the home of the Cœur d'Alene and other bands settled there under said agreements, and that it shall never be sold or otherwise disposed of without their consent.

It is further agreed that the United States shall expend the sum of $150,000 for the benefit of the Cœur d'Alene Indians; $30,000 the first year and $8,000 per annum for fifteen years thereafter, in providing them with a steam saw and grist mill, in the employment of an engineer and miller, and in the purchase of such useful articles as shall best promote their civilization, education, and comfort, and, under certain stipulated conditions, cash payments may be made to them. In addition to this, it is agreed that the United States shall employ, at its own expense, a competent physician, blacksmith, and carpenter, and supply medicines for said Cœur d'Alene Indians.

There are some other provisions intended to protect the morals and improve the condition of said Indians, but the foregoing are the principal features of the agreement.

The Commissioners give an interesting account of the Cœur d'Alene Indians, and commend them in the highest terms for industry, thrift, and sobriety. They speak of them as polite in a marked degree and exceedingly good-natured. They wear short hair, dress like the whites, and emulate them in everything save their vices. They live in comfortable houses, many of them having two—one on the farm and another in the village—cultivate the soil extensively, are loyal to the Government, respectful of the laws, devoted to their religion, and in short a better ordered or behaved community of Indians can nowhere be found. Such is the testimony of the Commissioners.

AGREEMENT WITH THE PEND D'OREILLE OR CALISPEL INDIANS.

An agreement was entered into with these Indians at Sand Point, Idaho, whereby they agreed to remove to and settle on the Jocko (or Flathead) Reservation in Montana. They relinquish all claims they

have or ever had to lands in Idaho and Washington Territories, or elsewhere. If any of them prefer to settle on the Colville Reservation, in Washington Territory, or the Cœur d'Alene, in Idaho, they are permitted to do so.

In consideration thereof the United States agrees to erect a saw and grist mill on the Jocko Reservation for their use; to build a sufficient number of houses for their accommodation; to assist them in clearing, breaking, and fencing not less than 5 acres of land for each family; to provide certain employés; to purchase agricultural and other needed implements, seeds, clothing, and medicines; to care for the sick, aged, and infirm, and to otherwise assist them as their wants may require.

Chief Victor is to have $100 per annum during the remainder of his life; and any of the Indians who have made improvements where they now reside, are to be permitted to dispose of the same by sale and receive payment therefor.

AGREEMENT WITH THE INDIANS OF THE JOCKO RESERVATION.

Negotiations were had with these Indians, in order to obtain their consent to the removal and settlement of such of the Upper and Middle Spokanes and Pend d'Oreilles as should elect to settle there under the agreements previously made with them. Such consent was obtained, and in consideration thereof the United States agrees to erect a saw and grist mill on said reservation for the tribes now in occupation thereof, and to provide a competent blacksmith for them and tools for his use.

THE BOIS FORTE AND GRAND PORTAGE BANDS OF CHIPPEWAS IN MINNESOTA.

Having concluded all authorized negotiations with the Indians in the Northwestern Territories, the Commission, in the early part of April, returned to Minnesota, in order to complete the work necessarily postponed in November on account of the closing of navigation on Lake Superior, and the consequent difficulty of reaching the Bois Forte and Grand Portage Reservations at that season of the year.

The agreement of August 11 and September 7, 1886, with the White Earth and Pillager and Lake Winnebagoshish bands of Chippewas was presented to the Bois Forte and Grand Portage bands, in council assembled, all its provisions carefully explained, and its benefits offered to them. Neither band was willing to remove from its present reservation, and as that was one of the principal conditions of the agreement, it was rejected unanimously by both bands.

The grounds of their opposition to the agreement are fully set forth in the report of the Commission.

With the visit to the Bois Forte and Grand Portage bands the duties of the Commission in the field terminated.

In submitting these several agreements (5) for transmittal to Congress, I have the honor to make the following suggestions and recommendations:

In my annual report for the current year, in speaking of the work of this Commission, I observed that it was not to be expected that any suggestions or recommendations of the Commission would be adopted by Congress which the existing severalty law might render unnecessary.

After carefully reviewing the reports of the Commission and the several agreements submitted by them, I am free to say that in my judg-

ment the severalty act, so called, could not be substituted for the agreement made with the Indians in Northern Montana, nor the several agreements made with the Indians in Idaho and Washington Territories, with equal benefit to the Indians concerned, for the following reasons:

The Indians in northern Montana—on the Great Blackfeet Reservation—are not sufficiently advanced in civilization to take lands in severalty, and assume the obligations and responsibilities of citizenship which is conferred upon all those to whom individual allotments are made under said act.

Not only are they not prepared to take lands in severalty, but they do not desire to take that step at present; and the President has wisely ordered that allotments shall be made only on reservations where the Indians are known to be generally favorable to the experiment. Moreover, as shown in the beginning of this report, the country occupied by them is altogether unsuitable for that purpose. The Indians must be provided with stock for breeding purposes, and encouraged to raise cattle, sheep, and horses, not to the entire exclusion of farming, but as their chief industry and dependence. This they can do better, probably, at least for some time to come, by holding their lands in common. There is nothing, however, to prevent their taking grazing lands in severalty if at any time in the future it shall be deemed desirable to try the experiment with them.

Furthermore, if the agreement should fail of ratification, it is likely that these Indians will for a long time to come remain, as now, entirely dependent upon the bounty of the Government; and their vast possessions will continue to stand as a bar to the progress and development of the Territory which embraces them.

The agreements with the Upper and Middle bands of Spokane Indians and the Pend d'Oreille Indians provide for their removal and settlement upon the Cœur d'Alene and Jocko Reservations, and for the settlement of claims against the Government on account of lands taken from them in times past without compensation. The severalty act could not accomplish these much-desired objects, nor could it be substituted for other beneficent provisions found in said agreements with the Cœur d'Alene and Flathead (Jocko Reservation) Indians. The former provides for the settlement of a land claim similar to those of the Spokanes and Pend d'Oreilles; and also makes provision for the settlement of the Spokanes on the Cœur d'Alene Reservation, while the latter provides that the scattered Pend d'Oreille and other Indians may settle on the Jocko Reservation; objects greatly to be desired.

From all that has been said, then, it will be seen that the several agreements must stand upon their own merits, irrespective of the severalty act, whose provisions it will be my endeavor to carry out wherever practicable.

To my mind the agreements are just and favorable alike to the Government and Indians. Millions of acres of land, equal to a great State, are made available to the white settler; long-standing and provoking claims against the Government are amicably adjusted; a very large number of Indians hitherto living in idleness, poverty, and vice—a standing menace to the peace of the country—are to be gathered upon existing reservations, and assisted in the paths of civilization and toward their final self-support; and I think if faithfully carried out the future of these Indians will be extremely hopeful.

I therefore have the honor to recommend their speedy ratification.

Should Congress be pleased to take such favorable action thereon,

the following sums of money should at the same time be appropriated to carry the agreements in effect, viz:

NORTHERN MONTANA INDIANS.

First installments, as per Article III of the agreement with the Indians of the Great Blackfeet Reservation		$430,000

NOTE.—Congress appropriated $235,000 for the support of these Indians, the current fiscal year, *as an absolute gratuity.*

UPPER AND MIDDLE BANDS OF SPOKANE INDIANS.

First installment, as per Article V of the agreement with said Indians		$30,000
Pay of blacksmith and carpenter, at $900 each, Article VI		1,800
Pay of six chiefs, at $100 each, Article IX		600
Total		32,400

CŒUR D'ALENE INDIANS.

First installment, as provided in Article VI of agreement		30,000
Pay of physician	$1,200	
Purchase of medicines	150	
Pay of blacksmith	900	
Pay of carpenter	900	
		3,150
Total		33,150

PEND D'OREILLE OR CALISPEIS.

Article 1: Saw and grist mill		$6,225
Dwelling houses (40)		6,000
Clearing, breaking, and fencing		1,500
Engineer, $720; miller, $720; carpenter, $900; blacksmith, $900		3,240
Cows, $3,200; horses, $10,000; wagons, $2,000; harnesses, $600; stoves and agricultural implements, $1,500; clothing, medicines, and seeds, $2,500; removal of Indians, $1,000; Article III, pay of chief, $100		20,900
Total		37,865

FLATHEADS AND OTHER INDIANS OF JOCKO RESERVATION.

Saw and grist mill		$6,225
Pay of miller	$720	
Pay of blacksmith	900	
		1,620
Purchase of tools		500
Total		8,345

Very respectfully, your obedient servant,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

NORTHWEST INDIAN COMMISSION,
Blackfeet Agency, Mont., February 11, 1887.

SIR: The Commission appointed under authority of the act of Congress approved May 15, 1886 (Indian appropriation act), to negotiate with certain tribes and bands of Indians in Minnesota and the Northwestern Territories, have the honor to submit the following report of their negotiations with the several tribes in northern Montana, occupying the Gros Ventre, Piegan, Blood, Blackfeet, and River Crow Reservation, commonly known as the Blackfeet Reservation, to accompany an agreement entered into with them for the reduction of said reservation, as contemplated by said act.

Leaving the Fort Berthold Agency, in Dakota, on the 16th of December last, the Commission proceeded to Glendive, on the Northern Pacific Railroad, and thence by wagon-road to the Fort Peck Agency via Fort Buford, the summer route from Glendive, which is somewhat shorter, being impracticable owing to the deep snow. Fort Peck Agency was reached on the 23d of December. The weather was extremely cold, the mercury falling to 45° below zero on the night of the 25th. Two days were spent in examining into the condition and wants of the Indians and in devising plans for their future well-being.

The first question to engage the attention of the Commission was as to the advisability and practicability of attempting the removal of the Sioux of Fort Peck to the Great Sioux Reservation, in Dakota, our instructions contemplating such a step if deemed expedient.

After a thorough investigation of the matter the Commission decided that it was unadvisable to make the attempt. The Indians were decidely opposed to such change, and manifested a good deal of surprise and uneasiness at the mere suggestion of the plan. It was learned that the few who went to the Standing Rock Agency last spring would have returned had they been allowed to do so, and some did return. There was much sickness in the tribe at the time, and a few, perhaps 250, becoming alarmed, thought to escape by going to their relatives in Dakota. The band numbers about 2,300 souls and the removal of the few families referred to had no significance other than that mentioned. The Sioux at the Fort Peck Agency have occupied the country there for nearly a quarter of a century, and claim equal rights with the other Indians in the Blackfeet Reservation, which claim is not disputed by any of the other Indians occupying the reservation. By reference to the act of Congress establishing the reservation (18 Stats., p. 28) it will be observed that the reservation was set apart for certain tribes or bands specified by name, "and such other Indians as the President may, from time to time, see fit to locate thereon." The Sioux were placed upon the Blackfeet Reservation by the Government over twenty-three years ago, and it does not appear that their right of occupancy has ever been questioned. By long residence they have become greatly attached to the country, and would not voluntarily abandon it. The Assinaboines of the Fort Peck Agency, who number about 1,100, are for the most part settled at Wolf Point, about 20 miles from the agency. The Sioux have their habitations in the immediate vicinity of the agency.

Neither of these bands are as yet prepared to take lands in severalty. Indeed the country occupied by them is not suitable for that experiment. It is in no sense a good agricultural country, and it would be a very difficult matter, if not impossible, for a white man to make a living there, if confined strictly to the cultivation of the soil.

Montana, aside from its mineral resources, is essentially a stock-grazing country, the northern portion of it especially being but poorly adapted to anything else; hence it is that stock-raising has become the principal industry of the people.

The frequent failure of crops, owing to the aridity of the soil, renders farming not only unprofitable, but uncertain as a means of support. Therefore, if the Indians in northern Montana are ever to become self-supporting they must engage in those pursuits which the whites by long experience have found the country best adapted to—cattle, sheep, and horse raising. This need not and should not be to the entire exclusion of farming, but it should be their chief industry and dependence.

It can be said positively that the Fort Peck Indians can never become self-supporting where they are through the cultivation of the soil alone; but there can be no doubt that with proper encouragement they would soon reach that position as stock-growers. Stock-herding is suited to their tastes, they are willing to work and realize the necessity of doing for themselves, and it is but right and just that their efforts should be encouraged and directed in a way that will be most likely to advance their civilization and happiness. Furthermore, it is absolutely certain that unless they have cattle given them, and become stock-raisers, the Government will be obliged to support them for all time or allow them to starve.

Holding to these views, we have made provision in the agreement with them to enable them to become self-supporting as a pastoral people. The reservation set apart for them is ample, but not too large, and was selected with that end in view. The consideration agreed upon for the cession of their surplus lands will be sufficient to furnish them with cattle, sheep, and other stock for a successful start in that direction, and to subsist and otherwise care for them until they are able to support themselves without aid from the Government.

The promise of stock cattle was the principal inducement which led to the cession of the vast territory relinquished to the Government. The agreement was satisfactory alike to the Indians and their friends present during the negotiations; and we believe that if strictly carried out the Indians will require no further aid from the Government.

From the Fort Peck Agency the Commission returned to the railroad via Fort Buford, and proceeded to Helena, and thence by stage route to the Fort Belknap Agency, arriving there on the 18th of January, after a most perilous and fatiguing journey of

250 miles, made in open sleighs, for the most part over a trackless road, and during a period of extremely cold weather.

Negotiations were immediately opened with the Fort Belknap Indians, and after three days conciling the agreement was accepted and signed by a large majority of the male adults attached to the agency. A reservation was selected, embracing the region of country between Milk River and the Little Rocky Mountains, and extending from Snake Creek to Peoples Creek on the north, and from one extremity of the Little Rockies to the other on the south. The Indians were unwilling to remove, either to the Fort Peck Agency or to any distant reservation, but they consented, unanimously, to take the lands above described for their permanent home.

The lands selected for them are as good, if not the best, for agricultural purposes in all that region of country, being well watered and susceptible of irrigation at a small cost. They are also admirably adapted to stock-raising, and the timber in the mountains is accessible, so that the needful buildings for agency purposes and Indian dwellings can be erected at a very moderate cost.

The proximity of the present habitations of the Indians to the military post of Fort Assinaboine is destructive both of the health and morals of the troops and Indians as well. This is admitted by every one having a knowledge of the facts, and the evil can be remedied only by removing the Indians to a greater distance from the post, as is provided in the agreement.

The compensation agreed upon with the Fort Belknap Indians for the cession of lands is a little larger in proportion to their number than that agreed upon with the Fort Peck Indians, but it should be understood that the Fort Belknap Indians are required to remove from their present homes, and will need additional assistance on that account, whereas the Fort Peck Indians will remain where they are. The Fort Belknap Agency must also be removed, necessitating the expenditure of money in the erection of new buildings and removal of agency property and may be some of the buildings now in use.

Leaving Fort Belknap Agency on the 23d of January, the Commission returned to Sun River Crossing, 5 miles northeast from Fort Shaw, en route to the Blackfeet Agency, 100 miles distant from the latter place.

When about 20 miles from the crossing, the wind which had been blowing from the southwest suddenly shifted to the north, and one of the severest snow-storms that ever visited this region set in, the mercury falling in a few minutes from 30° above to 20° below zero. The snow was blinding to man and beast, and it was with no little difficulty that we managed to reach a place of shelter in the town of Choteau, 35 miles distant from Sun River Crossing. The storm continued with unabated fury from the 28th of January to the 5th of February. Snow fell to the depth of nearly 2 feet and the cold was intense, the mercury registering as low as 50° below zero. For two days (February 1 and 2) it remained from 36° to 40° below zero.

No one ventured out of doors except upon the most urgent business, and then only to go from house to house. All travel was suspended and the people of the little settlement were entirely cut off from communication with the outside world.

On the 5th of February the storm abated to such extent as to allow the Commission to continue its journey to the Blackfeet Agency. The roads and trails were entirely obliterated and could not be followed. A straight course was therefore taken across the country, and by the help of the compass and a most excellent guide the agency was reached in three days.

Negotiations were opened at once, the Indians being within easy reach.

It was evident from the beginning that the Indians had been tampered with by designing white men whom we found at the agency; men who hoped to gain some advantage to themselves in one way or another.

The chiefs began by complaining of ill-usage and bad faith on the part of the Government in past time, and charged that an immense tract of country had been wrested from them without any compensation in return, and that they had been left to starve, while their white neighbors had grown rich out of their misfortunes. They demanded $3,000,000 for the relinquishment of their interest in the surplus lands of the reservation and stubbornly refused to accept an offer of $125,000 per annum for ten years, which was made to them. Finally, however, after long and patient reasoning with them, they agreed to accept $150,000 per annum for the period mentioned.

Upon mature deliberation we decided to accede to their demand. The sum agreed upon is, proportionately, greater than the amount agreed upon with the Indians of the other two agencies, Fort Peck and Fort Belknap, but the argument was used, and it can hardly be disputed, that the needs of these Indians are in a large measure greater than those of the other Indians. There are more than 2,000 Indians at present attached to the agency, and there are from 500 to 1,000 on the other side of the international line who properly belong to the agency, and are likely to return sooner or later. They go and come as suits their pleasure, and no doubt very many will return in order to take advantage of the benefits to be derived from the present agreement.

Furthermore, these Indians, no doubt, have the most ancient claim upon the ceded territory, at least as far eastward as the mouth of Milk River. They occupied it as

far back as their history is known, and they naturally feel that they have a stronger claim to it than any of the other Indians. They were earnest and persistent in demanding recognition on that account.

While this did not go far in influencing our decision, it undoubtedly made the Indians more stubborn and exacting in their demands.

What has been said in regard to the policy to be pursued with the Fort Peck Indians is equally true in respect of the Fort Belknap and Blackfeet Agency Indians.

They must be encouraged in stock-raising as well as in agricultural pursuits. They can never become self-supporting in any other way.

The reservation set apart for the Indians of the Blackfeet Agency extends from the Cut Bank to the Rocky Mountains, and is sufficient for all their wants.

The execution of the agreement with the Piegans, Bloods, and Blackfeet concludes our labors with the Indians in northern Montana.

By the terms of the agreement a tract of country, estimated to contain 17,500,000 acres, is ceded to the United States. Three separate reservations are retained for the Indians.

We have made every possible effort looking to the conclusion of this work in time to get it before Congress, if it should so please the Department, during the present session, and we trust that it is not yet too late.

No human foresight could have accomplished more. We have traveled night and day in open vehicles during a period of cold weather which will be memorable in the history of Montana, and without a day's delay that could possibly have been avoided.

Very respectfully, your obedient servants,

JOHN V. WRIGHT,
JARED W. DANIELS,
C. F. LARRABEE,
Commissioners.

Hon. J. D. C. ATKINS,
Commissioner of Indian Affairs, Washington, D. C.

Agreement concluded December 28 and 31, 1886, and January 21, 1887, with the Indian of the Gros Ventre, Piegan, Blood, Blackfeet, and River Crow Reservation in Montana, by John V. Wright, Jared W. Daniels, and Charles F. Larrabee, Commissioners.

This agreement, made pursuant to an item in the act of Congress entitled "An act making appropriations for the current and contingent expenses of the Indian Department, and for fulfilling treaty stipulations with various Indian tribes, for the year ending June 30, 1887, and for other purposes," approved May 15, 1886, by John V. Wright, Jared W. Daniels, and Charles F. Larrabee, duly appointed Commissioners on the part of the United States, and the various tribes or bands of Indians residing upon the Gros Ventre, Piegan, Blood, Blackfeet, and River Crow Reservation, in the Territory of Montana, by their chiefs, headmen, and principal men, embracing a majority of all the male adult Indians occupying said reservation, witnesseth that, whereas the reservation set apart by act of Congress approved April 15, 1874, for the use and occupancy of the Gros Ventre, Piegan, Blood, Blackfeet, River Crow, and such other Indians as the President might, from time to time, see fit to locate thereon, is wholly out of proportion to the number of Indians occupying the same, and greatly in excess of their present or prospective wants; and whereas the said Indians are desirous of disposing of so much thereof as they do not require, in order to obtain the means to enable them to become self-supporting, as a pastoral and agricultural people, and to educate their children in the paths of civilization;

Therefore, to carry out such purpose, it is hereby agreed, as follows:

ARTICLE I.

Hereafter the permanent homes of the various tribes or bands of said Indians shall be upon the separate reservations hereinafter described and set apart. Said Indians, acknowledging the right of the various tribes or bands at each of the existing agencies within their present reservation to determine for themselves, with the United States, the boundaries of their separate reservation, hereby agree to accept and abide by such agreements and conditions as to the location and boundaries of such separate reservation as may be made and agreed upon by the United States and the tribes or bands for which such separate reservation may be made, and as the said separate boundaries may be hereinafter set forth.

ARTICLE II.

The said Indians hereby cede and relinquish to the United States all their right, title, and interest in and to all the lands embraced within the aforesaid Gros Ventre

Piegan, Blood, Blackfeet, and River Crow Reservation, not herein specifically set apart and reserved as separate reservations for them, and do severally agree to accept and occupy the separate reservations to which they are herein assigned as their permanent homes, and they do hereby severally relinquish to the other tribes or bands respectively occupying the other separate reservations, all their right, title, and interest in and to the same, reserving to themselves only the reservation herein set apart for their separate use and occupation.

ARTICLE III.

In consideration of the foregoing cession and relinquishment, the United States hereby agrees to advance and expend, annually, for the period of ten (10) years after the ratification of this agreement, under direction of the Secretary of the Interior, for the Indians now attached to and receiving rations at the Fort Peck Agency, one hundred and sixty-five thousand dollars ($165,000); for the Indians now attached to and receiving rations at the Fort Belknap Agency, one hundred and fifteen thousand dollars ($115,000), and for the Indians now attached to and receiving rations at the Blackfeet Agency, one hundred and fifty thousand dollars ($150,000), in the purchase of cows, bulls, and other stock, goods, clothing, subsistence, agricultural and mechanical implements, in providing employés, in the education of Indian children, procuring medicine and medical attendance, in the care and support of the aged, sick, and infirm, and helpless orphans of said Indians, in the erection of such new agency and school buildings, mills, and blacksmith, carpenter, and wagon shops as may be necessary, in assisting the Indians to build houses and enclose their farms, and in any other respect to promote their civilization, comfort, and improvement: *Provided*, That in the employment of farmers, artisans, and laborers preference shall in all cases be given to Indians residing on the reservation who are well qualified for such positions: *Provided further*, That all cattle issued to said Indians for stock-raising purposes and their progeny shall bear the brand of the Indian Department, and shall not be sold, exchanged, or slaughtered, except by consent or order of the agent in charge, until such time as this restriction shall be removed by the Commissioner of Indian Affairs.

ARTICLE IV.

It is further agreed that whenever, in the opinion of the President, the annual installments provided for in the foregoing article shall be found to be in excess of the amount required to be expended in any one year in carrying out the provisions of this agreement upon either of the separate reservations, so much thereof as may be in excess of the requirement shall be placed to the credit of the Indians of such reservation in the Treasury of the United States and expended in continuing the benefits herein provided for when said annual installments shall have expired.

ARTICLE V.

In order to encourage habits of industry and reward labor, it is further understood and agreed, that in the giving out or distribution of cattle or other stock, goods, clothing, subsistence, and agricultural implements, as provided for in Article III, preference shall be given to Indians who endeavor by honest labor to support themselves, and especially to those who in good faith undertake the cultivation of the soil, or engage in pastoral pursuits as a means of obtaining a livelihood; and the distribution of these benefits shall be made from time to time as shall best promote the objects specified.

ARTICLE VI.

It is further agreed that any Indian belonging to either of the tribes or bands parties hereto, who had, at the date of the execution of this agreement by the tribe or band to which he belongs, settled upon and made valuable improvements upon any of the lands ceded to the United States under the provisions of this agreement, shall be entitled, upon application to the local land office for the district in which the lands are located, to have the same allotted to him or her, and to his or her children, in quantity as follows:

To the head of the family, one hundred and sixty acres; to each child over eighteen years of age, eighty acres; to each child under eighteen years of age, forty acres; and the grant to such Indians shall be adjusted upon the survey of the lands so as to conform thereto.

Upon the approval of said allotments by the Secretary of the Interior, he shall cause patents to issue therefor in the name of the allottees, which patents shall be

of the legal effect and declare that the United States does and will hold the lands thus allotted for the period of twenty-five years, in trust for the sole use and benefit of the Indian to whom such allotment shall have been made, or, in case of his decease, of his heirs, according to the laws of the Territory of Montana, and that at the expiration of said period the United States will convey the same by patent to said Indian, or his heirs as aforesaid, in fee, discharged of said trust and free of all charge or incumbrance whatsoever. And if any conveyance shall be made of said lands, or any contract made touching the same, before the expiration of the time above mentioned, such conveyance or contract shall be absolutely null and void: *Provided*, That the laws of descent and partition in force in said Territory shall apply thereto after patents therefor have been executed and delivered: *Provided further*, That any such Indian shall be entitled to his distributive share of all the benefits to be derived from the cession of lands to the United States under this agreement the same as though he resided within the limits of the diminished reservation to which he would properly belong.

ARTICLE VII.

The outboundaries of the separate reservations, or such portions thereof as are not defined by natural objects, shall be surveyed and marked in a plain and substantial manner, the cost of such surveys to be paid out of the first annual installments provided for in Article III of this agreement.

ARTICLE VIII.

It is further agreed that whenever in the opinion of the President the public interests require the construction of railroads, or other highways, or telegraph lines, through any portion of either of the separate reservations established and set apart under the provisions of this agreement, right of way shall be, and is hereby, granted for such purposes, under such rules, regulations, limitations, and restrictions as the Secretary of the Interior may prescribe; the compensation to be fixed by said Secretary and by him expended for the benefit of the Indians concerned.

ARTICLE IX.

This agreement shall not be binding upon either party until ratified by Congress.

Dated and signed at Fort Peck Agency, Montana, on the twenty-eighth day of December, eighteen hundred and eighty-six.

JNO. V. WRIGHT, [SEAL.]
JARED W. DANIELS, [SEAL.]
CHAS. F. LARRABEE, [SEAL.]
Commissioners.

It is hereby agreed that the separate reservation for the Indians now attached to and receiving rations at the Fort Peck Agency, Montana, shall be bounded as follows, to wit:

Beginning at a point in the middle of the main channel of the Missouri River opposite the mouth of Big Muddy Creek; thence up the Missouri River, in the middle of the main channel thereof, to a point opposite the mouth of Milk River; thence up the middle of the main channel of Milk River to Porcupine Creek; thence up Porcupine Creek, in the middle of the main channel thereof, to a point forty miles due north, in a direct line, from the middle of the main channel of the Missouri River opposite the mouth of Milk River; thence due east to the middle of the main channel of Big Muddy Creek; thence down said creek, in the middle of the main channel thereof, to the place of beginning. And said Indians shall have the right to take timber for building and fencing purposes, and for fuel, from the bottom lands on the right bank of the Missouri River opposite the reservation above described.

Dated and signed at Fort Peck Agency, Montana, on the twenty-eighth day of December, eighteen hundred and eighty-six.

JNO. V. WRIGHT, [SEAL.]
JARED W. DANIELS, [SEAL.]
CHAS. F. LARRABEE, [SEAL.]
Commissioners.

The foregoing articles of agreement having been fully explained to us, in open council, we, the undersigned chiefs, headmen, and principal men of the several bands of Sioux and Assinnaboine Indians attached to and receiving rations at the Fort Peck Agency, in the Territory of Montana, do hereby consent and agree to all the stipulations therein contained.

Witness our hands and seals at Fort Peck Agency, Montana, this twenty-eighth day of December, eighteen hundred and eighty-six.

SIOUX.

Signed with an x mark and seal:

Mat-to-wa-kan, Medicine Bear; Wam-a-da-zee, Yellow
Deer Tail; Chah-dah-sa-pah, Black Hawk; Wam-
Wa-da-lu-cha-chi-conna, White Maggot; Mo-to-c
Tee-pee-sha, Red Lodge; Wa-ge-ah-du-ta, Red Tl
Door; Wa-ma-de-coah, Rushing Eagle; Ma-za-napp
wa-cah, Medicine Voice; Ma-ta-o-on-ka, Fast B
Foot; Ma-to-oya-wa-kah, Medicine Bear Track; Na
Ta-tonka-wa-keah, Lightning Bull; Pah-hunta-
hawk-un-zhia, Standing Elk; Ka-hee-wa-coah,
tonka-skah, White Bull; Wa-ha-chunka-sappa, Bla
zee, Yellow Horse; O-ya-wash-ta, Good Track; Ol
Shun-ga-duta, Red Dog; Hay-ata-nu-ghi, Stand Of
Pole or Red Lance; Hoon-ka-wa-na-ka, Chief Gl
Hoop; Pa-he-ozha, Porcupine Sack; Weet-kah, E
Dog; Pe-ta-na-za, Standing Cow; Ha-sah-per, Bl
Red Hoof; Me-no-wa-ka-pa, Knife River; Da-unka
stay in Camp; Ma-to-ya-zhena, Lone Bear; Ma-t
Wa-ha-tcan-ka-kinza, Flying Shield; Wa-ke-en-sl
ha-i-ya-o, All Goes; Ta-ta-ma-za, Iron Wind; O-
ming, Turing Wing; Ghun-ka-wa-cte, Good Do
Chicken; I-ju-to, Blue Rock; Ta-ka-ska, White E
Fox; Wameneomenehotak, Grey Whirlwind; E
Ta-pe-zoe, Yellow Liver; No-cha-wam-a-de, Deaf,
e-che-che, Bad Tempered Bear; Tip-sin-ner, Turni
Good Bird Voice; Mah-pea-chanta, Cloud Heart;
Eagle; Ka-ke-u-kin, He has the Crow; Ka-hark
William Bruguier; Ma-to-junk-ah, Running Bea
Head; Ma-to-she-cha, Bad Bear; Wa-keahweecha
Ta-tunk-ka-checunna, Little Bull; Ma-toa-wa-na
ka-ze, Crow Belly; Ta-ko-ko-kepesh-ne, Not Af
Iron; Hook-pahuohonka, Fast Wing; Wa-ka-mo
Ma-to-e-na-pah, Bear Comes Out; Ke-ah, Flying;
Sha-ta-sappa, Black Hawk; Ta-shin-ah-topa, Fo
ka-muzha, Bear Stands High; Ta-chah-pee, Wa
Red Eagle; Ma-pee-a-sappa, Black Cloud; Wa-ke-o
der; Ta-tonka-hoska, Long Bull; Wa-ti-ah, Go
coeur, Chasing Hawk; Wa-ma-de-o-money, Walki
Shun-ka-o-nah-umpe, Dog Listens; Ha-muzza, Iro
Low Bear; Ma-to-na-pe, Bear Necklace; Ka-ke-
ha-tanka, Big Foot; Sa-ka-ma-za, Iron Nails; We-
Pa-ta-wa-ka-nuzha, Medicine Cow Standing; Wa
No. 2; Ha-harker-u-ee, Scattering Elk; Ta-to
Bull; Shun-ka-ho, Dog's Voice; Ha-etch-ah-ka-
pa-ho-money, Moving Medicine; Ta-ma-e-che, Po
He-ha-ze, Yellow Owl; Ha-wash-teshta, Good Ho
Dog; Cha-hoske, Long Tree; Shunka-ma-kos-ung,
to-ku-appa, Chasing the Bear; William Danills
Hawk; Ma-to-e-cha-keza, Fight the Bear; O-ja-o
O-ke-shina-duta, Red Boy; Wah-e-koyer, Hangs
Destroyer; Ah-ke-che-da-e-da, Burnt Soldier; T
Good Pipe; Wa-ma-da-cha-ka, Eagle Claw; Ta-
Chester A. Arthur; Wa-arp-paser, Scared Out; I
Sitting Cow; Ma-to-wam-a-da, Bear Eagle; Ma-
to-kee, Yellow Eye; We-cha-pe-tonka, Big Sta
ening Bear; Ta-tonker-ha-muzer, Iron Horn Bull;
Indian Tom; E-charp-sinta-muza, Iron Whip; Se
Medicine Bear; Ah-ta-sha, Red All Over; Ma-to-n
na-hoska, Long Fox; Shok-tok-nappa, Wolf Ne
Pa-ta-ha-tonka, Big Cow Horn; Sha-tonk-wa-ke
tonka-wit-ko, Crazy Bull; Tow-hu-ska-muza, I
doza, Fast Horse; Oke-skinner-washta, Good Boy
She-o-pah, Chicken Head; Ah-pa-a-tunka, Big Ma
Cha-ta-no-pa, Two Hawks; Bo-pah, Thrown Of
Te-o-ches-ede, Dung On The Floor; Pa-zhe-to,
Scout; Hay-hawk-ka-ho-washta, Good Elk Voice
ta-my-ha, Poor Shoulder Blade; Oko, Gap; Ma-ka

Shunk-sca, White Horse; Wa-na-hinta, Scrape Snow; Wa-ha-chunka-sca, White Shield; Ka-ke-we-cha-cha, Crow Man; Shunk-a-money, Dog Walking; Ta-cha-pe-sappa, Block Toma-hawk; Pa-sah-ha, Snow Shoe; Shunk-a-money-to, Wolf; Ek-ta, Sponge; Cha-ta-o-ya, Hawk Tracks; E-la-to-ea, Paint Face Blue; Oak-shena, Boy; Ha-o-ka, Clown; Unk-to-ma-topa, Four Spiders; Na-pa, Two; Cha-da-hota, Grey Hawk; Ma-to-u-zhe, Bob Tail Bear; E-tay-choca, Wrinkled Face; Zink-pa, Musk Rat; Suze, Yellow Ball; E-ke-a, Close; Se-ha-ke-chu, Put on the Foot; No-pa-ke-ta, Kill Two; Ma-ha-ta-my-ha, Poor Goose; Chu-e-ta-sa-ka, Par-flesh-Rib; Ta-tonka-do-ta, Throat of Bull; We-zee, Old Lodge; Cha-ka-nopa, Left Hand No. 2; Is-ta-wa-nich, No Eyes; Wa-zee-ga-wa-ch, Break Pine; Wa-ke-ah, Lightening; Hoo-cah, Root; Ma-zah-ho, Iron Voice; Zint-ka-scka, White Bird; Cha-ka-ho-wakun, High Back Bone; Ish-ta-pesto, Sharp Eyes; Ke-do-koo, Bring Himself; Yanktonais; Wa-ma-de-e-uatoka, Sitting Eagle; Ta-pe-ze-che-kunna, Little Yellow Liver; We-ne-tay, Woman's Hip; Ma-ga-sha, White Swan; Na-pa-wa-nitch, No Hand; To-kon-duta, Red Stone; Ma-stin-sca, White Rabbit; Chay-da-sca, White Hawk; Ka-ke-chin-cha, Young Crow; Ca-ho-La-me, Turns Crooked; Ma-stin-sca, White Rabbit No. 2; Ka-ya-e-nuzza, Stands Behind; Yea-ta-cay, Hangs Up; Se-ha, Foot No. 2; Oak-ha, Singer; John Bruguier; William Cross; Chas-ka, Clown; Ma-he-u-be-do, Plow; Ma-to-o-ta, Plenty Bears; Ha-hawk-a-sappa, Black Elk; Zin-ka-to, Blue Bird; Ma-coo-a-pa, Strike the Breast; E-ah-ka-oza, Take it Alive; We-cha-ke-che-ze, Stands him Off; Se-pah-ga-zhe, Bent Foot; Joe Lougie; Te-pee-hoska, Tall Lodge; Minne-wa-ka, Whiskey; Cha-ka-e-on-ka, Left Hand Running; Assinniboine, Assinaboine; Ta-sunka-wasta, His Good Horse; Shunk-wa-zie, Lone Dog; We-e-no-a-ma, He Who Stole Woman; Nappa-ska, White Hand; We-cha-we-oak-se-acha, Hard Looking Man; Wa-posta-seache, Bad Hat; Newell Burshia; Ho-ha-wa-narke, Assinaboine Ghost; Ga-ha-za, The Shaddow; Se-pa-hunka, The Toe; Du-tah, One Who Feels; Ma-ta-ah-we-cha-cha, Old Turtle; Ma-to-ah-poster, Bear Skin Cap; Ta-ka-ha-wa-koo-ta, Uses for Shooting; U-zu-e-iah, Going To War; Pa-sha, Red Head; Ho-zoo-er-ma-tofer, Four Iron Legs; E-Santee-se-cha, Bad Santee; Chac-a-pa, The Twin; Wo-ota-be-da-ha, Plenty to Eat; Ka-pee-o-money, Walking Crow; Ta-tonka-we-cha-cha, Old Bull; Ta-tonka-ca-de-ca-da, Scabby Bull; E-ka-bak-sah, Cuts the Ropes; No-ha-u-te-ta, One Trigger; Minne-cho-pa, Walking in Water.

Attest:
D. O. COWAN,
United States Indian Agent.
S. H. POPE,
Superintendent Agency Boarding School.

We hereby certify that the foregoing articles of agreement were carefully read and explained to the Indians, parties hereto, in open council, and were thoroughly understood by them before signing the same, and that the agreement was executed and signed by said Indians at the Fort Peck Agency, in Montana, on the 28th day of December, eighteen hundred and eighty-six.

JOHN BRUGUIER,
United States Special Interpreter.
WILLIAM CROSS,
United States Agency Interpreter.

Attest:
D. O. COWAN,
United States Indian Agent.
JAMES MACDONALD,
Industrial Teacher.

Witness our hands and seals at Wolfe Point Sub-Agency, Montana, this thirty-first day of December, eighteen hundred and eighty-six.

ASSINABOINES.

Signed with an x mark and seal:

E-ah-sha, Red Stove; Chek-pah, Twin; Shu-ka-he-na-hoska, Long Fox; E-unka-ka-hoppa, Made to Run; Ha-ha-ka-ho-hosska, Loud Voiced Elk; Ha-cha-no-pe, Smokes at Night; Ho-ka-wa-poster, Badger Skin Cap; Esh-toke-sah, Broken Arm; Ta-tonka-ptchna, Short or Little Bull; We-eecho-we-cha-a, Wounded by White Man; Shunka-wa-ma-day, Dog Eagle; Ma-

pe-a-to, Blue Cloud; He-ze, Yellow Tooth; Jack Mitchel, Grandmother; Shunka-duza, Red Dog; Wa-che-a-cha-cha, Growing Thunder; Ma-pe-a-shena, Blanket Cloud; Pa-hun-ta, Duck; Upta-pe-to-pa, Shoots Four Times; Shunga-ah-tark-pe, Charging Dog; E-o-wa-ka, Medicine Rock; Wa-tesh-e-darka, Handkerchief; Mar-ka-garp, Dig the Ground; We-cha-wa-ka, Medicine Man; Ou-tarpe, The Shooter; Hook-he-he, Marrow Bone; Se-hah-duta, Red Foot; Pa-hun-ta-nopa, Duck No. 2; Shunk-ma-ne-to-nape, Wolf Necklace; Ma-tosha, White Bear; Ah-poone; We-ah-ko-wa-zha, One Feather; Wa-ma-no, Thief; E-ah-wa-nar-ke, Stone Ghost; E-wash-te-a-ne-on, Nearly Dead; Tes-e-tonka, Big Belly; Ta-e-o-money, Seen Walking; Cha-cha-char-char, Swings His Thigh; Wy-ink-pa, The Arrow; Ta-tanker-wint-ko, Crazy Bull; E-unker-o-keshne, Cant Run; Dakota-hasker, Long Sioux; Ta-cha-pe-wa-keer, Thunder War Club; Cha-ta-hota, Gray Hawk; Ma-to-ko-ke-pa-pe, Afraid of Bear; Ta-shunka-sha, White Horse; We-cha-sha, The Man; E-ta-eha-tarpe, Laughing Face; Wa-kun-e-nar-zha, Stands High; Chant-ka, Left Hand; Ha-mar-zer, Iron Horn; Wa-su-sheener, Hait-Blanket; E-Santee, Santee; Wa-sea-sha, White Men; He-ha-wa-pa, Owl Head-dress; Chant-a-sutta, Strong Heart; Robert Hopkins; Ta-ha-omoney-ta-he, See-his-horn Walking; Oke-shin-e-ze, Yellow Boy; Ma-Pe-we-cha-za, Cloud Man; Chan-de, Tobacco; Tart-ze, Deer; Tar-tonka-hota, Grey Bull; Pa-ha-wa-kunta, High Crane; Ma-za-ska, Money; Pa-wa-ink-pa, Head Arrow; Wa-ka-wa-nar-ke, Medicine Ghost; Ta-wa-su, His Hail; Ho-ze-nopa, Marrow Bone No. 2; O-to-na-wa-ke-a, Flies Straight; Wa-ma-de-shon-ner, Eagle Feather; Ha-hunker-she-conna, Small Elk; Wa-pa-ali, Lance; Cha-no-pazza, Smoker; Chat-ka-no-pa, Left Hand No. 2; Ta-we-cha-a-pa, Beat His Wife; Ou-ta-pe, Shot Out; Shun-ga-nopa, Two Dog; Shun-ga-sin-ta-nopa, Two Tailed Dog; Ah-ha-pe, Night; Chan-de-mene, Smells of Tobacco: Ko-ta-washta, Good Shot; Chunk-on-ota, Lots of Road; Wa-koo-arpe, Chaser; Su-heen-ut-sapa, Fat Fox; Pe-ta-chintz, Calf; Pa-has-ker, Long Crane; Ta-tonker-o-chon-echer, Buffalo Flesh; We-ah-ka-duta, Red Feather; Cha-cha-nuzza, Rattling Stands; E-o-wa-konker, Lying White Man; Ta-tonka-e-ahke, Buffalo Runner; Ink-pa-duta, Red Top; O-ga-wa-ha, Turning; Wa-ma-de-to-ka, Second Eagle; Ha-me, Crooked; Cha-no-pa, Pipe; Ta-oppe-oter, Many Wounds; Ha-wa-xhe-na, One Horn; Ka-ka-she-na, Crow Blanket; Te-o-pa, Door; Pa-da-na-oke-shea, Ree Boy; Sha-e, Cree; We-cha-pe-tacha, Shortie; E-ka-tonka, Big String; Ma-toa-ha-Gie-ta, Bear looks about; Wa-ma-de-topa-oke-shena, Four Eagle Boy; Ha-to, Blue Horn; E-ah-pa-te-ta, Pushing Stone; Ta-hoo-to, Blue Neck; Ma-ka-ah-gahpe, On the Ground; Ta-shunga, His Dog; Ta-tonka-ska, White Bull; Pa-ha-to, Blue Mane; Ho-o-ta, Many Voices; We-cha-pe-marza, Iron Star; Shunga-sea-cha, Bear Dog; We-cha-pe-topa, Four Stars; Ta-tunk O-money, Walking Bull; Me-na-che-cha, Bad Knife; Wa-hart-sunka-ma-to, Bear Shield; Johnson; Wah-ke, Spirit; To-ke-chu, Paints Blue; Wa-su-de-ta, Red hail; Ar-ke-che-da-pe-ta-ta-che-na, Short Soldier; Shu-pa-tonka, Big Gut; E-a-spia, Wets his Mouth; Wa-ma-de-oga-waka, Circling Eagle; Wa-kee-che-cunna, Young Thunder; Pa-tunka, Big Head; Henry Auchdall; Ho-wa-xhe-touta, One Big Leg; We-ke-oke-shena, Thunder Boy; Un-ke-ah, Both; He-ka-mo-ko-ta, Cat Shooter; Po-ke-ka-she-da, Shaved Clean.

Attest:
D. O. COWAN,
United States Indian Agent.
GEORGE W. WOOD,
Missionary Presbyterian Church.
GEORGE H. WOOD.
JAMES MCDONALD.

We hereby certify that the foregoing articles of agreement were carefully read and explained to the Indians above named in open council, and were thoroughly understood by them before signing the same, and that the agreement was executed and signed by said Indians at Wolf Point Sub-Agency, Montana, on the thirty-first day of December, eighteen hundred and eighty-six.

JOHN BRUGUIER,
Special Interpreter.
HENRY ARCHDALE,
United States Agency Interpreter.

Attest:
D. O. COWAN,
United States Indian Agent.

It is hereby agreed that the separate reservation for the Indians now attached to and receiving rations at the Fort Belknap Agency shall be bounded as follows, to wit:

Beginning at a point in the middle of the main channel of Milk River, opposite the mouth of Snake Creek; thence due south to a point due west of the western extremity of the Little Rocky Mountains; thence due east to the crest of said mountains at their western extremity, and thence following the southern crest of said mountains to the eastern extremity thereof; thence in a northerly direction in a direct line to a point in the middle of the main channel of Milk River opposite the mouth of Peoples' Creek; thence up Milk River, in the middle of the main channel thereof, to place of beginning: *Provided*, That the Secretary of the Interior may in his discretion set apart a track of land within said reservation, not to exceed one hundred and sixty [160] acres in extent, for the establishment and maintenance of an Indian mission and industrial school, under the auspices of the Society of Jesus, to include the site of their present mission buildings; but such privilege shall not debar or exclude other religious societies from establishing Indian missions and schools within said reservation, under the direction of the Secretary of the Interior.

Dated and signed at Fort Belknap Agency, Montana, on the twenty-first of January, eighteen hundred and eighty seven.

JNO. V. WRIGHT, [SEAL.]
JARED W. DANIELS, [SEAL.]
CHARLES F. LARRABEE, [SEAL.]
Commissioners.

The foregoing articles of agreement having been fully explained to us in open council, we, the undersigned chiefs, headmen, and principal men of the Gros Ventre and Assinniboine bands of Indians, attached to and receiving rations at the Fort Belknap Agency, in the Territory of Montana, do hereby consent and agree to all the stipulations therein contained.

Witness our hands and seals, at Fort Belknap Agency, Montana, this twenty-first day of January, eighteen hundred and eighty-seven.

GROS VENTRES.

Signed with an x mark and seal:

At-tan-ick-e-wa, Jerry; Torb-a-nike, Lame Bull; Ho-a-nike, Crow Chief; Nots-a-be-hon-e, White and Yellow Cow; Wus-a-nuck-co, Sleeping Bear; Ban-ath-a-woke, Skunk; As-sin-ne-wus-in, No Bear; Cack-a-tha-wat-tan-a, Black Wolf; Bawn-nis-caw, Red Whip; Nik-an-toab, Bull Robe; Wat-tchie, White Head Dress; Ban-at-taw, Dirty Ear; Ne-ta-woo-tin-ah, Took First; Non-na, Rider; Ne-thoo-a-tin, Man who takes again; Nik-a, The Bull; Aut-zin, The Mouse; A-ne-ban-ath, Big Crows; Cack-a-thaw, Hobbled Wolf; An-thro-awn, The Breast; Non-na, Rider No. 2; Kan-asha, Skinner; Na-wats, Left Handed; Ne-hawn-e, The Runner; Ut-ta-nock-ke, White Dog; Wos-sin, Grass; Ne-ant-to, White Man; An-ni-hie, Young Man; Nie-he-wa-tan, Black Bird; Nots-cun-na-nin, Go to War; Nin-wat-tas-tin-ah, Man takes plenty; Wus-a-nock-e, Grey Bear; Thay-on-nots-a-be, White Weasel; Cack-a-thawn-wat-tan-a, Black Wolf No. 2; Na-no-n-ith-e, Crooked Arm; An-nun-a, Arapahoe; Kib-ba-ni-ka, Low Bull; Wus, Bear; Ka-ne-hungh, Butcher; Tay-on, Weasel; Nie-hie-nock-e, White Bird; Wos-sa-ni-ka, Bull Elk; Kib-bits-utts, Sits High; Wus-ex-o, Little Bear; E-sis-nots-a-be, Little White Moon; Na-wake, Captured; An-ni-hie, Young Man No. 2; That, Frog; Won-ant-tat, Many; Bawn-hock-e, White and Red Thunder; Ne-hie-cut-ta, Bushy Head; Ne-hie-hock-ke, Bird Chief; Ah-be-hie, Old Prairie Dog; Ka-he-ha, Butcher No. 2; Ni-ka-kin-ah-tha, Bull Easily Killed; Wam-a-de-chin-tha, Eagle Child; Nay-on-e-tobe, Otter Robe; Ni-kan-haw-can, Crazy Bull; Na-wats, Captures; Ni-ka-e-tobe, Old Bull Robe; Ne-thoo, Two Trees; I-yet-ta, Deaf; Ex-thot-ka, Little Shield; E-sis-nots-a-be, White Sun; Bill Jones, Bill Jones; O-wat-tan-a, Black Crow; Ah-wa-ta-yah, Many Eagle Tails; Sis-se-ya-nin, Rattle Snake Man; Ka-ne-ha, Butcher No. 3; Thu-wa, Spear; Bat-ta-wa, Took the Bow; Ca-ca-a-nin, Flathead; Tha-wa, Stabber; Nath-hots-a-be, Three Calves; Nots-cun-ha-hin, Warrior; E-tha-bin-thoot, Woman's Dress; Kis-a-hin, Little Man; A-let-ah, Web-foot; Bets-heits, Arrow Points; Ne-hie-ust-tas, Bird Sits Sideways; Tchap, Stabber No. 2; Non-naits, Rider; Ant-tchi-wan, Bunch of Feathers; Neick-a-that, Fast Runner: Wus-a-he-thic, One Bear; Ne-hie-thots, Shaking Bird; A-be-how, Yellow Fox: Nits-in-tchir, Hole in the Water; Ex-o-nin, Short Man; A-be-tchos, Hairy Fox; Ka-he-hon, Skinner; Thats-ex, Little Pine; Nie-hie-tis-ah, Bird Tail; Ni-ka-tis-an, Buffalo Tail.

ASSINABOINES.

Mung-gaw, Little Chief; We-tah, Small; Ma-to-wan-kon, Medicine Bear; Mon-o-gaw, The Male; To-ge, The Shell; Ta-ches-an-de, Ball Dung; Wa-se-cha-oke-she, White Child; Wa-hunk-se-cha-scaw, White Bear; Ta-tung-ga-sap-pa, Black Bull; Shung-a-tung-oke-she-hac, Horse Boy; Im-mock-pe-ah, The Cloud; Shung-a-she-cha, Bad Dog; E-ah-wah-ge-an, Speaking Thunder; Tow-chu-e-can-ung-a, Took the Shirt; How-ee-min-a, Walking-Sun; O-ta-chaw-pa-ba, Many Stabber; He-can-da-po-pa, Snapping Wolf; Cha-tum-ho-ta, Grey Hawk; Ah-can-da-scaw, The Lizzard; Ta-tung-a, The Bull; Wa-tche, Hawk Feathers; Te-mondus, Camp Walker; Wo-he-hugh, The Glutton; Shunk-o-za, Dog's Rump; Ne-ha-to, Blue Breath; Red-mouth-[Sha-he-ah], The Cree; Sho-tung-a, Gun; Muz-za-wah-se-cha, Iron White Man; An-no-wung-ga, Galloper; Ta-tchen, Yellow Calf; Sha-he-ah-has-ka, Tall Cree; To-gaw-ca-tase, Enemy Killer; O-ke-she-na-chat-ka, Left Handed Boy; Chin-cha-ink-pi-ah, Drop Child; She-ague, Brant; O-he-sta-shaw, Red Plume; Ma-to-sin-ta-kan-da, Rattle Snake Bear; Pe-ab-ba, Make Up; O-pen, Short Knife; Hung-gaw-huz-za, Standing Chief; Wah-in-ta, Bear's Face; O-zo-zu-haw, Breeches; Ke-ah-moo-moo, Roaving Flyer; O-te-in-win-jockt-ta, Old Thunder; Hung-gaw, The Chief; O-ta-ap-ba, Shock Many; Ten-ink-pa-chie-ah, Thrown in the Lodge; Wam-a-de-she-shugh, Savage Eagle; Coash-caw-hun-ga, Young Man Chief; Ti-he-hap-pa-in-jos-ca; Tied Necklace; Ha-muz-za, Iron Horn; Shock-co, Seven; Win-chock-pe-tung-a, Big Star; Ta-tung-a-ze, Yellow Bull; Pa-ta-scaw, White Buffalo; Kie-hu-tum-ba, Pack and Fight; Pa-ze-ze, Yellow Head; Ma-to, The Bear; Wa-man-upe, The Chief; Oke-she-ho-ta, Gray Boy; Oke-she-ha-nom-pa, Two Boys; We-ah-e-yo-tung-ah, Sitting Woman; Ha-ha-ga-muz-za, Iron Elk; O-e-pa-ta, Fine Beads; Win-chie, Strap; In-ta-scaw, White Face; O-she-na-sap-pa, Black Boy; O-zie-in-kan, Rose-bud; Wa-ha-chung-a-ah-goo, Took the Shield; Se-chu-wa-sna-ge-ah, Greese Foot; Ga-pope, Popper; In-ta-to-ge-ah, Tattooed Face; Sung-a-sap-pa, Black Dog; Ga-schie-she-ha, Shawl; Ma-to-hung-ga, Bear Chief; Im-moc-pe-ah-to-wung, Cloud Eyes; Jackson, Jackson; Ma-to-o-ta, Many Bears; To-ga-ge-ah-ta, In the Lead; Win-cha, The Man; Coon-e-wunk, Lying Low; Cosh-ca-ick-te-an, Real Young Man; Sus-smage, Dragon Fly; Sung-a-muz-za, Standing Dog; Wam-a-de-chin-cha, Eagle Chief; Cha-tun-hung-ga, Hawk Chief; He-hungh-sap-pa, Black Owl; In-toos-she-wa-kon, False Medicine; Oke-she-na-hung-ga, Boy Chief; O-ene, Red; Chaw-o-teine, Lodge in the Timber; Ho-shu-ba, Fish Guts; Ma-to-sin-ta-can-da, Rattle Snake's Trail; Suta, Strong; Chu-e-bob-a-nich-a, Bird Breast; Min-a-tung-a, Big Knife; Ta-to-gan-e-unk-e, Running Antelope; Ke-hung-an, Made a Chief; Te-in-josh-ca-o-ta, Fancy Lodge; Ho-ba-muz-za, Iron Wings; Wa-pah, The Hat; She-ha-to-pa, Four Blankets; Wa-hunk-se-cha-scaw, White Bear No. 2; Chawn-du-pa-nuz-za, Standing Pipe: Wah-su, Hail Stone; Ha-ha-ga-du-ta, Red Bull Elk; Unk-shu-shu, Pease; Ma-caw-she-ha, Dirt Robe; Gaw-wink-cha-mon-a, Made Walk Slow: Wah-tung-a, Big Snow; Se-ah-o-ba, Wounded Foot; Wa-se-cha, White Man; Chon-de-sno-ta-oke-she, Tobacco Boy; Ta-tung-a-ha-wa-pa, Bull Skin Cap; Wa-snaw-snaw, Ring Bear; Min-hie-o-to-wun, Open his eyes in the water; To-pa-ta-tung-a, Four Balls; Kei-keis-a, Squeaking; E-a-chie-ah, Attacks; Hung-ah-mon-a, Walking Chief; Sunk-o-tchintz-i-tone, Bob-tailed Horse; Ah-hai-pe-wash-she-cha, Night White Man; She-o-shag-ga, Pheasant's Claw; Sin-ta-can-da, Rattle Snake; Shunk-bo-tun, Prowling Dog; Tow-she-ha-to-pa-ok-she-ha, Four Blanket Boy; Chaw-wap-ba, The Pine; Sho-tung-a-ho-ga, Gun Ear; E-ah-gun-nuz-za, Standing on the Mountain; Wy-o-wa-wun, Paper Maker.

Attest:

W. L. LINCOLN,
United States Indian Agent.

CHAS. G. FISH,
Agent Clerk.

FRANK A. BICKFORD,
Agency Physician.

A. H. RISER,
Agency Farmer.

FRED'K EBERSCHWEILER,
S. J. Missionary.

We hereby certify that the foregoing articles of agreement were carefully read and explained to the Indians above named in open council and were thoroughly

understood by them before signing the same, and that the agreement was executed and signed by said Indians at Fort Belknap Agency, Mont., on the 21st day of January, 1887.

WM. BENT,
United States Agency Interpreter.
WILLIAM BROWN,
Special Interpreter.

Attest:
CHAS. G. FISH.

It is hereby agreed that the separate reservation for the Indians now attached to and drawing rations at the Blackfeet Agency shall be bounded as follows, to wit:

Beginning at a point in the middle of the main channel of the Marias River opposite he mouth of the Cut Bank Creek; thence up Cut Bank Creek, in the middle of the main channel thereof, twenty (20) miles, following the meanderings of the creek; thence due north to the northern boundary of Montana; thence west along said boundary to the summit of the main chain of the Rocky Mountains; thence in a southerly direction along the summit of said mountains to a point due west from the source of the north fork of Birch Creek; thence due east to the source of said north fork; thence down said north fork to the main stream of Birch Creek; thence down Birch Creek, in the middle of the main channel thereof, to the Marias River; thence down the Marias River, in the middle of the main channel thereof, to the place of beginning.

Dated and signed at the Blackfeet Agency, Montana, on the eleventh day of February, eighteen hundred and eighty-seven.

JNO. V. WRIGHT, [SEAL.]
JARED W. DANIELS, [SEAL.]
CHARLES F. LARRABEE, [SEAL.]
Commissioners.

The foregoing articles of agreement having been fully explained to us in open council, we, the undersigned chiefs, headmen, and principal men of Piegan, Blood, and Blackfeet nation, attached to and receiving rations at the Blackfeet Agency, in the Territory of Montana, do hereby consent and agree to all the stipulations therein contained.

Witness our hands and seals at the Blackfeet Agency, Montana, this eleventh day of February, eighteen hundred and eighty-seven.

Signed with an x mark and seal:

Onesta-Poka, White Calf; Mokska-Atose, Big Nose; Penoke-Moiase, Tearing Lodge; Em-ki-o-toss, Fast Buffalo; So-uee-Omuce, Brocky; Si-ee, Crazy Wolf; Kyes-Tskee, Curley Bear; Natose-Onesta, Big Brave; Nis-atskina, Four Horns; Ap-Kichomake, Skunk Gap; Epe-toyese, Shortie; Enouc-Kiys, Bear Chief; Moquee-Oxoyese, Wolf Tail; Nissok-kiys, Four Bears; Machee-tometah, Almost a Dog; Mina-kija, Bear Chief No. 2; Kipi-Tosorcuts, Kicking Woman; Stoye-ka, Cold Feet; Onesta-Poka, White Calf No. 2; Es-suker-kin, Heavy Collar; Ape-Cotoye, Hat Tail; Mix-so-atus, Red Bird Tail; Pa-cops-in-copy, Lazy Man; Ah-co-to-mac, Running in the Road; Maqua-is-to-patar; Strangling Wolf; Mo quee ma con, Running Wolf; Ima ta oot a kan, Dog's Head; Es-soka-a-pish, Heavy Roller; Espi cooma, Shooting up; Ah pas to ki, Behind the ears tack; Na mok saco pe, Man Mooring; Ah cats a men, Many Guts; Ah chista omue, Running Rabbit; E sick katock a nacash, Chief on the Prairie; Frank Pearson, Pete; Frank Pearson; Ne hoot skenah, One Horn; Jack; Coehuck-sin, Fancy Jim; Omuck emuca, Big Elk; Pone, Paul; Sa kop oo cee, Good Robe Out; Nama, Cross Gun; Heachoa, Left Hand; Aso kenac, Old Doctor; Ah ko su nats, Many Tail Feathers; Ke nuck we uish tah, John Powers; Stomech Chokos, Ball Calf; Onesta Paka, Jim White Calf; Sepes tokini, Old Top; Atiopan, Rye Grass; Mash tana, Crow Chief; Ena Coocum, Chief Coward; Aneshtashlowootan, Calf Shield; Motina, Chief All Over; Emu ch konash ketope, Roan Horse Rider; Oo mucx ootakan, Big Head; Okaneport, Talked About; Keeschicum, Thunder; Sixtux, Bite; Muchaw, Mack; Mik Kimaston, Tron Crow; Upuny, Butterfly; Sah-que-ha-mah-ka, Dick; Jack Miller; Passhee, Visitor; Na makon, Takes a Gun; Alex Kys; Dick Sandervice; Frank Gardipee; George Star, Alex. Kyo, jr., John White Calf, Louis Kyo, Oliver Sanderville, Will Russell, Horace J. Clarke, Tom Kiya, Pete Champagn, Frank Spearson; Apakeok, Spread Out; Spi-yo-quon, Apache Pete; Seenks Stomacks, Proud Bull; Ma Stow Apini, Crow Eyes; Isk Scena, Worm; Kemmuteque, Unlucky; Maginnio; Apashish, Weasel Fat; Akkia, Old Thing; Mexican Joe; Enucsapo, Little Plume; Ah nis tay ee, White Calf

Robe; Sappo-po, Packing Meat; Oc api otoos, Many White Horses; Ukuk kikimi, Big Top; Kayotses, Bear's Hand; Saka-poten. Short Hair Robe Out: Mina Stochs, Mounted Chief; Emuc Stomicks, Small Bull; Enuah Ota supse suk, Buffalo Adviser; Api Six-inum, Black Weasel; Appat appi, Blood Person; Eddie Jack, Anthony, Jee Shorty; Sape na machai, Taking Gun at Night; Pa-ute-ta-set-se-co, Billy Kipp; Eneshtonas, Buffalo Shape; Puitianos, Catch One Another; Ock she muck, Good Stabber; Solk to pochin, Under Swimmer; Piscon, Pound; Menikaspe, Brave Old Man; Stomichs quon, Bull Child; Manecupeatush, Buch Medicine; Pete Pepepimi, Spotted Eagle; Essokquaoma Kon, Heavy Runner; E-co-me, Billy Ellis; Si ichikin, Bear Shoes; Shuatoin ena, Feather Tail Chief; Men-nace, Berry Carrier; Ma sum a Katoosh, Long Star; Siccim Pistacon, Man loves tobacco; Batiste Rondin; See coor copatose, Last Star; Peta Ootacon, Eagle Head; Se coxina, Black Coyote; O, ne cus omuch. Antelope running; Omok Shoqua, Big Road; Nina emuka, Chief Elk; Peek Shawin, Bird Flies; Peta peckshina, Poor Eagle; Oksh ah wootan, Good Shield; Ne tana, Lone Chief; Mooe Su Kash, Hairy Coat; Ne tut Skina, Lone Horn; Ape neka peta, Morning Eagle; Espi Cooma, Man shoot in the air; Enuc K'yo, Small Bear; E sta opata, Man sits from them; Six i ki po ka, Black foot child; Stomichs oopush, Bull's Son; Sick Sucksa, Black Sousee; Shoks Main, Heavy Gun; Me ta nah, 2d Lone Chief; Pe tah, Eagle; Petah-epu, Eagle talk; Esci Ste quan, Wolfvorine; Shut is to pit qua, Split Ear; Ata Kapis, Yellow Wolf; Appo nishta, White Weasel; Na-ta-coo-ce ma ka, Double Gun; Ah Kutsa, Gambler; Neti num scha, Lone Medicine Man; Egosi Petah, Red Eagle; Etos Otocon, Red Head; Sheko kia, Black Bear; Sepish loo atoash, Owl Medicine; Apts Kina, Weasel Horn; Tor ke pis, Ear Ring; Moqui chickin, Wolf Shoe; Kesh sip poo nish ta, Cow running on side; Mamck Cupeena, Buck Chief; Mashlanano ck, Crow Feather; Sapo Chini, Crow Gut; Lecam Omue, Running Crane 3; Slach listomi, Under Ball; Mequid Se Sapoop, Red Plume; Apixis, Scabby; Ockshisho, Good Warrior; Ashenasham, Cree Medicine; Petah pickish, Eagle Rib; Nina Instom, Lodge Pale Chief; Natooup, Medicine Weasel; Ienaquishapoop, Morning Plume; Kishekiw, Sharp; Piutes ena mukum, Take guns from both sides; Echo to ko pa, Man rides horse in a day; Socots, Goat; Acotoka, Side and Side; Es ta sha ko, White Cow looking; Pin ti ah cocoma, About to shoot; Su natsis, Tail Feathers; Na to kes cenupa, Two Fox; Chaco coomi, Last shot; Upsha Kini, Arrow Top; Esto pes to muk, Wears hat on side; Sepiapo, Night Walker; Sumovquotoke, Old Rock; Che nawape, Old Kayote; Apuk, Broad Back; Nichitap, The Lone Man; Nape quon, White man; Cho que iscum, Big Spring; Ma que apete, Wolf Eagle; Ochequon, Grebs; Ope Kina, Brain Head; Me ca peape, Bad Old Man; Nop Ourcush, White Antelope; Mashtana, Chief Crow; Keapetoon, Temporary Married; Enapitze, Bones; Manashto, Young Crow; Neeha Pope, Chief Standing Alone; Estomich atoosh, Bull Medicine; Spio, Mexican; Massuca, Red Paint; Kutto Macon, Man who don't run; Caya chish, Bear Leggins; Enucksee, Small Robe; Omucksinstom, Big Pole; Cotta Sucks, Man don't go out; Acadmmoh, Man takes plenty arms; Echo Ka mix, Man holds Pipe; Kut ta nah, Top Chief; Skikenna Kema, Pities People; She pe na muk, Night Guman; Pena tuya muk, Running Fisher; A cokeya, Plenty Bears; Ma gua a hoopah, Wolf Child: Oke Shema, Mean Drinker; Meko kim namoka, Iron Gun tak-

Attest:
M. D. BALDWIN,
United States Indian Agent.
C. B. TOOLE,
Agency Clerk.
JOHN P. WAGNER,
Assistant Agency Clerk.

We hereby certify that the foregoing articles of agreement were carefully read and explained to the Indians above named in open council, and were thoroughly understood by them before signing the same, and that the agreement was executed and signed by said Indians at the Blackfeet Agency, in the Territory of Montana, on the eleventh day of February, eighteen hundred and eighty-seven.

WILL RUSSELL,
United States Interpreter.
JOSEPH KIPP,
Special Interpreter.

Attest:
EUGENE MEAD.
JOHN JORDEN.

NOTE BY INDIAN OFFICE.—No minutes of the councils held with the Indians of the Fort Belknap or Blackfeet Agencies were filed with the report of the Commission. It is learned from one of the Commissioners that the council proceedings were not reduced to writing owing to the extreme severity of the weather and lack of proper facilities where the councils were held.

The proceedings of the councils with the Sioux Indians of the Fort Peck Agency, were taken down, and are herewith presented. No minutes were taken of the council held with the Assinniboines at Wolf Point, same agency, for lack of necessary conveniences.

Proceedings of a council with the Sioux Indians of Fort Peck Agency, Montana.

In accordance with notification given by Agent Cowen, the Indians assembled on Monday, the 27th day of December, 1886, in one of the school buildings. There were present in the council 150 or more, including the chiefs and other principal men of the tribe. It was a full representation of the Yankton and other Sioux, living at Poplar Creek and in the country adjacent thereto, and several intelligent half-breeds and Indians were also present who reside at a distance from the agency.

At the appointed hour, Interpreter John Brugier introduced the Commission to the council.

Judge WRIGHT arose and said:

"My friends, I expect that you have been looking for us for some time. I suppose that you have heard that the Great Father has sent us to talk with you on some important business. We hoped and desired to have seen you sooner, but have had to visit other tribes and confer with them, so that we could not reach here at an earlier day than the present.

"The Great Spirit has given us a beautiful day in which to talk to you, my friends, and we hope that you will give your attention to the words that we speak. We desire you to understand all that we say. We ask your attention, so that you may give us an early answer, as we must go on to see other Indians. We do not wish to hurry you; we wish you to fully understand the business we have with you, and not to act with a blanket over your eyes, but with all the light before you, to act as free men, understandingly and intelligently. We have been sent among you as your friends, and only want you to do what is for your own good. We were sent by the Great Father to find out your condition and your wants, and to advise you for your own good and the good of your children.

"The Great Father knows that you are now poor; he knows that you have a great deal of land, more than you can work, more than you need; that you live in a cold country and frequently you can not raise crops for the want of rain; he also knows that in former times, when the buffalo roamed the plains and covered the hills, that you were rich and powerful; game was plenty and you could live by killing buffalo, which supplied all your wants; now that game has almost disappeared and the buffalo has ceased to roam over your prairies; he knows that you can not live as in the good times of old. Therefore, he wants to assist you so that you and your children may be able to settle down and make a living. He desires to help you so that you may live better than you are now doing and to collect about your homes many of the comforts of life. I see some of your people are growing old and will soon be called to the happy hunting-grounds beyond; like myself they can not live much longer, but before they go, before they cross the river, I suppose and believe these old men wish to make provision for their families; and some of you young men, with your young wives, wish to provide for your children who will soon grow up around you.

"The Great Father knows that your country suffers from drought, and that you can not make a good living by farming only; he knows, however, that the country is suited to cattle-raising, and that as the buffalo has gone the best thing to do is to put cattle in their stead, and if you be industrious, why can not you raise cattle as well and as successfully as the white man? Beef will then be plenty and you can feast as you did in olden times. You can go out on the prairie and shoot down a bull as you formerly did the buffalo, and call your friends together around your lodge, your tepee or your wigwam, have your feast, your song and your dance, and your heart will become strong as of yore.

"The Great Father knows that you have more land than you need and he wants you to sell to him the surplus land; he will pay you for it and pay you well; he does not ask you to give it up for nothing, but he will give you money for it, and with this money you can build you comfortable houses, buy your cattle, horses, and sheep, and make homes for yourselves and your children.

"He wants you to keep enough land for you and your children for all time to come. He knows that if you keep all the land you can not make a living on it. You know that the Government has for years been feeding you, furnishing you with provisions, clothing, and meeting all your wants, because you were poor and unable to make a living for yourselves.

"But, as you understand, the Great Father wishes you to reserve enough land, but to sell the balance, and with the money build you houses, buy provisions, clothing, stock, agricultural implements; build school-houses, employ teachers to educate your children, protect the orphans, and care for the aged and infirm. Now, we hope you understand that without some money you can do nothing of yourselves, that you can only get money by selling part of your land. Should you refuse, and hold on to all of your land, you would be no better off at the end of fifty years than you are now; but the Great Father wishes you to sell him a part of this land. He will give you the money to supply all your wants; that land which you reserve will be your own; each man can have his own little farm, his stock, and his cattle, own his own home, as the white man, and be prosperous and happy.

"If you refuse to do this the Great Father can do nothing for you, because he is now offering you what he thinks is for your own good and the good of your children. The Great Father has sent Dr. Daniels to see you, to talk to you. He has lived in this country and among the Indians for a number of years, and is known to be their friend, true and tried, and only desires their welfare. He has also sent Major Larabee from Washington, the home of the Great Father, who has been working for the Indians for years and years, and is perfectly familiar with their condition and wants. And I suppose he has sent me because he thought I was an honest man and would do you no wrong.

"I thank you that you have listened to me attentively and patiently, and hope that you will take heed to my words, for they are prompted by the desire to do you good. When I am through the other gentleman will talk to you. I hope you will accept our propositions, and believe that if you do you will never have cause to regret your action, but in after years you will look back upon it with pride and satisfaction. And I hope, in the near future, that you will become prosperous and self-sustaining."

Major LARABEE said:

"I am very glad to see you and shake hands with you all. We have been sent here by the Great Father, by the advice of the Great Council of the nation, to see what we can do to put you in a better condition. The Great Council is now in session in Washington, and we want to get through with our work here and at Belknap and Blackfoot so that we can send forward to Washington a report of what we have done for you before the Great Council adjourns.

"The time has come when Indians can not hold vast bodies of land as heretofore. White people are coming to America from all parts of the world. Emigrants are flocking over the plains and the prairies; the demand for land increases from day to day; the cry is, 'More land! more land!' The Government must take care of and provide land for her white children, as well as the Indians. But when the Government gets land from the Indians she wants to pay them for it. Now we, in the name of the Great Father, ask you to sell your surplus land; we will give you its full value; we will not rob you; would not take one acre from you that you or your children need. But knowing that you have vas tracts of land that you can neither work nor graze, we ask that you sell this part, and for it the Great Father will pay you a certain sum of money. Many people have denied that the Sioux have any right or title to this land here; they say that they do not belong here, but down in Dakota. When the Government sent us here we were told that we could make such agreement with you as we thought best—to remain or go away, just as you liked. During our stay here we have talked with many people—the military officers, your agent, late agent, and other friends, and it is the united opinion that it is better for you to remain.

"We also think it is better, and therefore shall not advise you to remove. And in treating with you we state in the outset that we recognize your right to this land, and we propose to treat with you as having equal rights in this reservation with all the other Indians; that is, the Assinniboines, Gros Ventres, and Blackfeet. I know that you have sometimes been uneasy yourselves because white men are continually saying that you have no right or title here, and that you should be sent from your present homes, and I know it will make you feel good—your heart strong—to hear us say that we think and believe that you have rights, and equal rights, in this vast domain, with all the other Indians located upon it, and that we propose to award to you a share of it, sufficient for you and your children now and for years to come.

"We will first treat with you, and if you consent and agree to and accept our terms, we will go to the other Indians and take them into the bargain, and all shall have enough and be satisfied, and when we are done we will send the agreement on to Washington to the Great Father and the Great Council.

"Our proposition is to leave to you and the Assinaboines at Wolf Point a reservation here. To the Indians at Belknap, a reservation that they may select, and to the Indians at Blackfoot, a reservation they may select. In addition to this we also propose to give you and the Assinaboines at Wolf Point, and to each of the other bands or tribes, a certain sum of money each year for a term of years, so that you will have the means to provide yourselves comfortable homes, gather around you stock, cattle, and sheep, and give you a good start in life.

"We have drawn up a paper with great care containing the several propositions which we submit. We have left out nothing, and have tried to put in all for your good, and we earnestly ask and urge you to accept the terms offered, assuring you that it will place you in a better position than you have ever been in before."

The agreement was then read and explained with great care and particularity, after which Major Larabee resumed by saying, "We do not expect that you will understand every word, but we will explain all details. We desire that you shall fully understand the terms offered, that you shall know what you are asked to do, and that you shall appreciate the value and the importance of the action that you may now take."

Dr. DANIELS said:

"My friends, Dakotas, I have known you for thirty years. Probably some here have seen me before. I am the Indians' friend.

"I knew your road when you had plenty of meat. As long as the buffalo was here you had plenty to eat. It furnished you your clothing; it furnished you your tepees; it filled every want. Now the buffalo is gone, and your road is dark. If you will look back you will see the graves of your fathers and children here and there along the wayside. I travel in the white man's road, and the Great Father has sent us here to put you in the white man's road, and if you will listen to our words and accept the terms contained in that paper, you will have plenty in the future. You will have enough land, and within ten years you can have the land covered with cattle. They will take the place of the buffalo.

"The Great Father wants you to have houses to live in. You will be more comfortable in houses with stoves in this cold climate. When you have houses and your stoves, you should have your little farms. You can cultivate your farms and also tend your cattle. They will be growing and increasing in number from year to year, and I hope to see the day when all your land will be covered with fat beef cattle and make the plains look like the days of the buffalo.

"Remember, the money for your lands will be paid to you each year for a series of ten years, and that it will be sufficient to buy you all you need.

"To encourage and stimulate labor, the Great Father promises to give more to those who work, who make for themselves good homes, cultivate their farms, raise crops, tend their cattle. He says to them who help themselves, 'I will help you; I want to see you comfortable; I want to see you live well; I want to see you enjoy life; and if you will only try, if you will only work, if you will do as I say, I will help you.' Do you want to be rich? You must do as the white man. He works, and works hard. I know you want to be be rich, and if you do, why don't you take hold and work? We don't expect the old men to work, but the young men must go to work. What I say to you I also say to the Assinaboines. I won't keep your ears open any longer. I am done. If you want to talk we will listen."

After Dr. Daniels had taken his seat Agent Cowen arose and said that he wished to say a few words to the council.

Agent COWEN then said:

"My friends, you know that I have been here but a short time but; I have been studying your interests. I have an eye single to your welfare, and as you come to my office and talk I listen, and I am thinking of your wants, and how to provide for you and to make you as comfortable as I can with the means at my command. I am your agent and your friend.

"You know that the white man is coming here, and that many say that you have no rights here, that you do not own the land. But other men, sent here by the Great Father, say that you have rights, and that they propose to fix and guaranty your rights to the land, and is it not better to let them settle it now and for ever? And you know that you can not use all the land; you do not need it, and they offer more than 500 acres to every man, woman, and child in your band. Therefore, with this liberal offer, is it not better for you to accept it, to take the land offered to you and the title fixed in perpetuity to you and your children?

"I have read this paper; have considered it well from every stand-point, and have studied its provisions, and I think it is liberal and good for you. They have offered you more money than I thought they would; it is enough and sufficient to meet all your wants, from year to year, to give each one of you a start, some cattle, some sheep, some ponies, as you may wish, and then there will be a surplus that can be put aside from year to year to help you out after the ten years are gone by.

"As your agent and your friend, who has your welfare at heart, I would advise you to accept their proposition.

"Now you can talk together or with me. Ask any questions that you may desire. These men want you to know what you are doing; they do not wish you to act in the dark, but to act with all the light before you and a full knowledge of the terms that are offered by the Great Father."

Medicine Bear and Red Thunder and others then came forward and shook hands with the Commission, after which Medicine Bear and Red Thunder made short talks to the Indians assembled. These speeches were not interpreted.

Medicine Bear then arose and addressed the Commissioners. He said:

"My friends, you have told me something. I want to go home and talk over it. I will meet you to-morrow morning."

A general handshaking was then gone through with, when the council adjourned and the Indians dispersed to their homes.

Pursuant to adjournment the council met at 11 o'clock Tuesday morning, December 28, 1886.

Judge Wright announced to the Indians that the Commission was ready to hear what they had to say.

MEDICINE BEAR arose and said:

"My friends, I want to tell you some things; but first I want to ask you something. Have you had any land given you since you have been out on this business?"

It was answered by Judge Wright: "Yes; other Indians with whom we have treated have sold us some of their land."

MEDICINE BEAR:

"My people made my father their chief; he died and his bones rest here. After his death I was made chief. I want to raise my children here and I want to die here and rest with my father. What you said about our rights yesterday in this country was right. Now I want to ask you to help us with the agent. We want more rations and we want more Indian men employed around the agency. The Yanktons and the Assinaboines can live together; let the other tribes have their land above us; we will watch our land, let them watch theirs. The whites can have the land above the Little Rockies. There is something else that I do not like; I want to have it fixed right; I want to have a good store here; the man that has the store here, trader's store, is a bad man."

YELLOW EAGLE:

"I am glad to see you good men come among us. What you told us yesterday was good. Some years ago, when I went to Washington, I shook hands with many good men; they told me to watch my land; I have done so. People used to kill each other. I am a soldier and speak right out; I used to kill many, but now, when white man comes as friend I shake hands with him.

"We are friendly with all the tribes, I shake hands with all, all good. Every spring they come down and talk together. Last spring they came down here and had a talk; they want their lands to join our lands.

"When at Washington I was but a boy. I was a soldier for six years and I watched our land. Our agent has made me captain of the police, and I will do my duty. I will watch the land. The agents that were here before were bad men; never said a good word to me; treated me as a dog. You told me yesterday many good words and I think my people can now live. When you go to Wolf Point the people there may tell you many things. I don't know much myself, but they are worse than me."

Iron Necklace gave a paper to Judge Wright; asked him to read it, and then he would tell the Commissioners something. The paper was then read, which gave him certain lands on the Muddy to work, and setting forth his good character.

Judge Wright said:

"Indian tribes now have no headman, no chief. The Great Father is the only chief."

"Before, nobody ever told us any good words. I am glad for what you have said, and I can see how we can now live. What you said yesterday was good, and all are satisfied. Our agent has made me lieutenant of the police, to take care of the land, and I will do it. On your way from Buford, you should have seen a land-mark between that post and the Big Muddy, and I want our reservation to extend to that mark. The white people can let their cattle graze on it, and use the wood; will not object or ask any charge, but I want our land to extend to that place.

"How are we to take care of our stock in the winter? We want mowing-machines to cut the grass and save the hay. Our agent is a good man, but some of the men he has employed are not good men. I want him to make a change. He now does not trust me well."

DEER TAIL: "My friends, what will become of my people when the ten years have passed?"

Judge W. answered and said, that the land would be theirs forever, and he hoped that during the ten years the people would accumulate some stock, and would be in a condition to make a living for themselves. I am willing to do what the Great Father says. I want to have the right to sell the beef hides. I want the agent to

fix the price at $5 per hide. The agent now cuts up the beef, but I want him to give it to the Indians whole and let them divide among themselves.

BLACK HAWK: "I feel bad; my heart is weak. I told the young men if they had anything to say to speak out. I am willing to do whatever they want. I am now fifty-eight years old. I never stole anything from the white man. I never wronged the white man. A white man gave me this paper to help me along to get something for my family. One of my men went away up North and died and I want something for his family." [This paper was read showing who he was and speaking in high terms of him.] "My people were then starving and dying. Much bacon and many sacks of beans are sent here and stored in the warehouse, but I can get nothing. I want the agent to give us bacon, sugar, and coffee this winter. Our young men were working all summer, but they have never been paid. I want to know when they will be paid. When I was in Washington the white men talked sweet, but when I got back home I got nothing. The Great Father gave us a big piece of land, but now he wants to cut it down; yet we headmen are willing to take what you offered us yesterday.

RED DOOR: "Since we have been here there are many things that I don't like. I am glad to see you good men come to see us, and am pleased with what you said, but there are some things that I do not like. There are some half-breeds here who can read and write, but they are not employed about the agency. Half-breeds should be employed about the agency and get the pay. The white men do all the work and get all the money. There are some white men here married to Indian women. I want those men moved outside the reservation. Some of our young men can learn to work; they do work sometimes, but never get any pay."

BIG EAGLE: "The Great Father has sent you here; you have two pockets; you must have tobacco in one and money in the other. All the game is not gone. I lived down at Box Alder last summer and had a hard time—liked to have died. I suppose the Great Father appointed our agent and gave him the annuities. I am glad of it. I like to get annuities. I want sugar and coffee every day."

Big Foot handed paper to Judge Wright, which the judge read; it commended him to the kindness of the white man, etc.

BIG FOOT: "My friends, look at me, The Frenchman treated me better many years ago. I have lived here twenty-three years. Some of the Cut Heads and of other tribes are here. I am satisfied with what you told us yesterday, but I want you to help us as much as you can. I want mowing-machine to help raise the cattle. We can make a living by raising cattle. The half-breeds can show us how to use the mowing-machine; can show us how to work and help us to work. I have heard ever since I was a boy that the Great Father wanted to help us. It is an old, old story. If we had mowing-machines we could cut the grass, save the hay to feed our cattle in the winter, and sell some hay, too, and get some money."

WHITE MAGGOT: "My friends I am young, but I want to be like the white man. I want to work as they do; I do not understand; tell me how much money you are willing to pay us for our lands?" [The amount was explained to him by the interpreter, so that he appeared to understand.] "I want money and am willing to work for it. I have worked, but have got no money for it. The Government used to send rations here, but then we got none. If you were living away off the Great Father would not send rations and never give you any. We never got any bacon, sugar, and coffee. I want to live here; many of my dead are here, and I want to live and die here. I have never spoken out before, because I did not think I would do any good; but I will speak now. The agent has worked many of our young men—has worked them hard; has killed some, and has never paid us a dollar. I am satisfied with what you have said. I want to butcher cattle ourselves as the Indians do at Standing Rock."

AFRAID OF THE BEAR: "I am a poor man. You told us yesterday how we are to live hereafter. I am satisfied. I thank you for what you said. When we get what you promised us we will have plenty of beef and all will get plenty to eat."

Red Lodge shook hands with all the Commissioners, and said, "I am satisfied."

RED THUNDER: "I was in Washington and talked with the Great Father and shook many good men by the hand. I am now old and am the only man living that was there that time of our people; all are dead. I am satisfied with any arrangement that you make with our young men. I am glad of what you told yesterday."

RUSHING BEAR: "We have said what we had to say, we are now done."

Judge WRIGHT arose and said:

"My friends, I want to say a few words. When we are through, if you agree to what is in that paper, it must be sent to Washington to the Great Father and the Great Council, who will read it, and if they think we have done right by you they will approve it and the money will be provided to carry out all that we have promised. But if they think we have done you a wrong they will not approve it. So you see it will not become a law until it is sent to Washington and approved by the Great Father and the Greal Council. Do you understand?

"Do you understand the boundaries of your reservation as offered by us? Do you know how much money you are to get? And how this money is to be expended? It is to be used in helping you to build houses, in buying provisions, clothing, and stock, and providing all things that may be required for you and your children; and if you go to work, take care of what is given you, in a short time you will have a plenty, and all that you save and make will be your own. So when the time runs out according to the law you will own your lands, you will own your own homes, you will own your cattle, your ponies, and all that you have about you. It will be yours; you can do with it as you please, as the white man.

"You have told me some things about your agent. He has been here but a short time. The Great Father thinks he is a good man. We think he is a good man. An agent will have trouble; he can not do to please all. You must help him; you must do right yourselves. You must have somebody here to help you, to care for you, to protect you, or the bad white men would run over you. Do you understand this paper? Do you know what it says?

"Now, if you are ready, come up and sign. We have listened to you."

Major LARRABEE said:

"My friends, we do not want to hurry you more than is necessary, but we must go to Blackfoot and Belknap Agencies. It will take twenty days to go to Belknap, attend to our business, and return to the railroad. The Great Council is now in session, and we must send the paper to it before it adjourns. It will close its session in February, so you see we must hurry. We have no time to spare or we will be too late. It will take ten days to go to Blackfoot Agency.

"Some of you headmen talked of the eastern boundary of your reservation. We have thought much over this matter, and we think the Big Muddy is the best line. It is a natural boundary; everybody will know it.

"Your reservation is large enough. We think you should be satisfied, and if you are satisfied with it we want you to come up and sign this paper. Has any one any questions to ask? I want you to understand, I will gladly answer all questions."

An Indian spoke of a white man living at Box Alder, and wanted him sent outside the reservation.

Major LARRABEE. The agent will attend to that. After the boundaries of the reservation are settled, all who have no business here will be ordered off. Your agent will protect you. If you are ready, come up and sign.

BLACK HAWK. The Indian always does what the white man asks him to do, but before the time runs out something more is asked; the bargain is changed. I thought that we owned lands across the river.

Major LARRABEE. It never belonged to you, but was simply attached to your reservation by the Great Father to keep the whisky men away. This paper gives the right to get all the timber you need across the river.

BLACK HAWK. I do not understand how the money is to be divided.

Major Larrabee then read that article of the agreement showing how the money was to be expended; all the details were fully explained. He also told them that the Commission had given the Indians at Berthold but one-half of this amount, and that they counted beans all night to get an idea of the amount, and the beans ran out: that the Indians said it was a plenty. And he said that they could not spend it, and that each year the Government would put the surplus away in the United States Treasury and keep it for them after the ten years had passed, and will do the same for you.

Yellow Eagle asked permission to address the Indians, which was granted; when he ended the signing commenced.

REPORT OF NORTHWEST INDIAN COMMISSION.

Washington, D. C., June 29, 1887.

Hon. J. D. C. ATKINS,
Commissioner of Indian Affairs, Washington, D. C.:

SIR: We hereby beg leave to submit a report of our proceedings with the Upper and Middle bands of Spokanes, Coeur d'Alenes, Lower bands of Pend d'Oreilles or Calispels, Confederated bands of Flatheads, Pend d'Oreilles, and Kootenais, Chippewas of Bois Forte, and Grand Portage Indians, residing in the Territories of Washington, Idaho, and Montana, and the State of Minnesota. Whilst on the way returning from the Blackfeet Agency, in the Territory of Montana, whither the Commissioners—Wright, Daniels, and Larrabee—had been, in order to make negotiations with the Piegans, Bloods, and Blackfeet tribes, a full report of which has heretofore been submitted, we received instructions by telegraph, forwarded by mail, announ-

ing that Major Larrabee had been recalled, and that Henry W. Andrews, of the State of New York, had been appointed to succeed him as Commissioner. On our arrival at Helena, in the Territory of Montana, after a short and necessary delay, in order to give time to Messrs. Larrabee and Andrews to arrange and settle between themselves their accounts as disbursing agents of the Commission, we proceeded on our journey. We arrived at Helena about 9 o'clock at night, having traveled in open sleighs on that day a distance of about 60 miles.

On account of heavy snows on the mountains the trains were delayed, and we did not leave Helena until the morning of the 23d, at 3 o'clock.

Arriving at Spokane Falls, Washington Territory, by rail, on the night of February 23, we at once set about ascertaining the location and disposition of the Indians in that locality.

The country was covered with a deep snow, which was beginning to melt on the side of the mountains, rendering travel almost impossible. The Indians were scattered around Spokane Falls over a considerable territory, and many of them had no means of travel except on foot and over mountains through deep snows. Soon after our arrival we secured an interview with Spokane Garry and Louis Welsho, two of the leading chiefs, and endeavored to arrange for a place and time of meeting. The former of these chiefs and most of his band are Protestants, the latter Catholics. This and some other matters of difference produced a want of harmony between these men, and some delay was occasioned, one desiring that the council should be held in the town of Spokane, and the other insisting that it should be held at the Mission, about 6 miles distant. This made it necessary that the Commissioners themselves should settle the question. On full inquiry from intelligent sources the Commissioners learned that a large number could be accommodated by meeting at Spokane Falls. Accordingly a suitable place in the town was selected and messengers dispatched to the various neighborhoods in which the Indians resided, notifying them of the time and place of meeting the Commissioners.

These Indians are very poor and ignorant, and it required much patience and delay in order to get a majority of them together. Having had no previous negotiations of any kind with the Government or any of its authorized commissioners, they were totally unused to such proceedings. Rumors of our coming had preceded us, and it was evident that either interested or idle-minded white men had impressed their minds that our advent boded no good to the Indian. Newspaper publications had informed the citizens that the removal of these Indians was a part of the policy of the Government, and this was no doubt communicated to the Indians.

The great body of the citizens of Spokane Falls and vicinity no doubt greatly desired their removal, but there were some who conceived that the removal was against the interests of a few who made something by traffic in a small way, and these, it was plain, were secretly opposing the plans of the Government. In spite of all these difficulties, by constant effort on the part of the Commissioners and some humane friends of the Indians, a meeting was had, which was attended by nearly the entire male population, chiefs, head-men, and others. We learned that the total number of male adults does not exceed 100, and the total of men, women, and children does not exceed 350 or 400. As will be seen by the agreement there were 87 male adults who signed it, and that comprised every one who was present in the council.

These Indians, as has been said before, are very poor. The lands around Spokane Falls, on which most of them reside, are almost barren. Gravel and sand from the surface to great depth predominate, and no white man would risk making a living by farming on it. Some of them have an idea of getting homesteads on the unoccupied lands, but being ignorant of the laws governing homesteads and the land grants made to the railroad company, they not unfrequently settle on railroad land or land on which claims of white men already exist. This produces much confusion and controversy and a bad feeling between the whites and the Indians. They are much addicted to intoxication and gambling, owing to their contact with white people, the natural result being idleness, poverty, and misery. A large number of them lounge all the time in and around the town, picking up a scanty living by begging and doing menial service for the whites. The women, as a result of all this, are degraded, and have little or no sense of virtuous habits and practices. This Commission, in its extended visits to numerous bands of Indians, has seen none so utterly degraded and helpless and none which appeals more strongly to the pity and conscience of the humane and the helping hand of the Government than do these unfortunate and unhappy people. Bereft of every foot of land which they and their ancestors once possessed, without a dollar of compensation, without their consent, and in spite of their earnest yet impotent protests; cities, towns, and farms now occupying the places where they once proudly walked as masters; in the midst of and under the absolute dominion of a superior and strange race, who look on them with indifference if not with contempt; with all the vices and none of the capacities of the superior race, conscious as they are that other Indians have received compensation for their lost heritage, whilst they have received nothing, the only messengers from the Government save this Commis-

sion having been military commanders and armed soldiers; with none but sad recollections of the past lingering in their minds, and no hope for the future, save the glimmering light of a far-off heaven infused into their benighted souls by the laudable efforts of Christian teachers, how could they be expected to listen with confidence to your Commissioners, and give ready consent to the propositions of the Government?

Deeply impressed with the unhappy condition of these Indians and earnestly desiring to do everything for their relief not incompatible with our instructions and in accord with the humane and generous policy of the Government, we determined at once to spare no effort or pains to induce them to remove to some more suitable place, where they could be protected and started in the path of progress and civilization. It was manifest that their continuance in their present locality would eventuate in their utter destruction and would prove a continual annoyance to the energetic and patriotic people rapidly flocking to the country.

The instructions which we received from the honorable Commissioner of Indian Affairs, of date July 27, 1886, who fully comprehended the condition of these Indians and the policy to be pursued toward them, were plain and unambignous. We were told "that we were to visit the Upper and Middle bands of Spokane Indians, and negotiate with them for their removal to the Colville, Jocko, or Cœur d'Alene Reservations, with the consent of the Indians of said reservations. They are scattered all over the country in the locations named, very many of them being in the neighborhood of Spokane Falls. Every proper inducement should be made to secure their settlement on one or the other of the reservations named. They claim to have been dispossessed of their land without compensation from any source."

In dealing with these Indians as with others, we beg leave to say that we were largely influenced by the wise and humane policy announced in the first report of the Secretary of the Interior, Hon. L. Q. C. Lamar. He said:

"It is not to protect the peace of the country or the security of its frontiers from the danger of Indian war, or on account of their hinderance to our material progress, that these efforts and expenditures are made in their behalf. It is because this Government is bound by duty, humanity, religion, good faith, and national honor to protect, at whatever of expense and sacrifice, these original possessors of the soil from the destruction with which they are threatened by the very agencies that make our prosperity and greatness. The sense of this obligation was profoundly felt by the founders of our Republic. They not only recognized it as the rule of their own conduct, but they wrote it down in their statutes and ordinances for the guidance of their posterity. The ordinance of 1787, one hundred years ago, article 3, contains the following language: 'Religion, morality, and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall ever be encouraged. The utmost good faith shall always be observed among the Indians. Their lands and property shall never be taken from them without their consent, and in their property rights and liberty they shall never be invaded or disturbed unless in just and lawful wars, authorized by Congress; but laws founded in justice and humanity shall from time to time be made for preventing wrongs being done to them and for preserving peace and friendship with them.' The principles embodied in these noble utterances," continues Secretary Lamar, "constitute the fundamental principles of a genuine Indian policy."

On Monday, March 7, the council opened. This day had been selected by the Indians themselves as the earliest time possible in which to collect their people. Chief Louis did not promptly arrive, and this caused another short delay. When he did arrive he was unwilling to proceed without the presence of the priest, Father Cataldo, in whom the Indians reposed great confidence. The father was sent for, and on his arrival negotiations began. We file with this report and with the agreement concluded with these Indians full notes of the proceedings of the council, from which will appear the difficulties we had to encounter in getting their confidence and finally obtaining their willing consent to our propositions. It was evident from the beginning that self-interested advisers had been at work in endeavoring to dissuade them from accepting our proposals. Their natural love of what was once their country, and their reluctance to leave it, was almost an insuperable impediment. They knew they had a just claim against the Government for their lost lands, and they feared that any cession of the same would be giving up their rights. They had doubtless been told that by some legal proceedings they might either recover their territory or get millions of money from the Government as pay for it. They knew that at a former period a commission, in which Governor Stevens was prominent, had made treaties with various tribes in their vicinity, had obtained cession of their lands, for which compensation was provided, and that it was the intention of that commission to negotiate with them for the cession of their lands. They were painfully aware of the fact that no subsequent commission visited them, and that now their country was entirely occupied by white people, and that they had received nothing for it. They claimed that there was within the boundaries of their reservation two millions or more acres of land, a description of which they gave. We fully explained to them

the reason why the Stevens commission failed to meet them, and why no subsequent settlement had been made, assuring them we were fully empowered to do as well by them as the Stevens commission would have done, and our willingness and readiness to do it.

Their reluctance to leave their old haunts was almost an unanimous feeling. They held councils among themselves, and they brought all their forces together in demanding that a separate reservation on the little Spokane River should be laid off for them, and that they be paid for the lands they had lost. So urgent were they in this demand, and so unanimous and stubborn in its assertion, that at one time we well nigh lost all hope of a successful issue of the negotiations. On diligent inquiry, and from most reliable sources, we learned that the land which they wanted for a reservation was totally unfit for the purpose. Its proximity to the whites, the character of the soil, and in every other particular made it the supremest folly to entertain the proposition. Finally, they urged the point that the authorities at Washington would grant their request if made known to them, and that the Commissioners were misrepresenting the Government in this particular. At a critical point in the negotiations we agreed to consult the Commissioner of Indian Affairs and await his answer before proceeding further. We prepared a telegram, in which we stated fully the situation of affairs, the demand for a new reservation, describing it, its location, character of soil, etc., and expressing our convictions that the removal of these Indians was demanded by every consideration.

To this we received the prompt reply of the honorable Secretary of the Interior, a copy of which is here given:

WASHINGTON, D. C., *March* 11, 1887.

To WRIGHT,
Chairman Indian Commission, Spokane Falls, Wash.:

Your telegram of 10th to Commissioner of Indian Affairs received. The President directs me to inform you that wish of the Indians for creation of new reservation for their occupancy can not be complied with under the law. If land suitable and sufficient on one of the three reservations, to which negotiations for their removal are restricted by law, can be selected by them where they may be to themselves, with consent of Indians now occupying the reservation, it may be designated as their reservation in the agreement which you negotiate.

L. Q. C. LAMAR,
Secretary.

We took the precaution of having Rev. Father Cataldo, the favorite priest of the Indians, present when we sent the dispatch, and on receiving the answer from the honorable Secretary of the Interior we immediately submitted it to his inspection. Subsequent proceedings showed that this step was well taken, for the Indians expressed doubts as to our good faith and the genuine character of the dispatches; but these doubts gave way before the statements of the missionary. Nothwithstanding all this, some of them continued to insist on a new reservation, but most of them raised new and different objections, all tending to show that their opposition to removal at all was the basis of all their actions. We had information on which we relied, that the opposition to removal was largely confined to chiefs and other leaders, and that the rank and file, or a majority of them, really desired to accept our propositions, but they were afraid to assert themselves in opposition to the chiefs. Finally, a few subordinates began to speak out, prominent among them, Elijah, who was one of Chief Gerry's band. He said, "My chief is foolish; when he gets out of the way he will take a bottle of whisky and drink. We saw it was wrong and took to one side from him. I have my idea I will get somewhere." At another time he said, "My father was a chief. He was not ashamed. He saw the white people. He always answered the questions which was spoken to him. A great many of my friends have the same idea with me. You came to do us good. You have given us plenty You have made the sun to shine. I am going away from here. I am going to the Indian lands." We make special reference to the conduct of this man, because we believe that his words and his example did much in bringing the minds of the Indians to a proper conclusion. One by one expressions like those of Elijah were made by the subordinates, and finally the chiefs began to see the direction in which their bands were heading, and they, too, came forward and accepted the proposition. The agreement covers all the points contained in our instructions. The Indians cede to the United States all right, title, and claim which they now have or ever had to any and all lands lying outside of Indian reservations in Washington and Idaho Territories. This cession covers a large territory of land to which these Indians had as good title as that by which any other Indians hold their lands. They had never ceded any portion of it to the United States, nor had they ever received any compensation for it from any source. It is true that much of it is poor and not suitable for cultivation, yet much of it is rich in soil, in timber, and in minerals.

The great Spokane Falls, which to a great extent has been utilized, the city of Spokane Falls, many other towns and villages, and thousands of farms are within its boundaries. We conceived it to be a matter of great moment that the cloud on the title to all this valuable property, existing by reason of the non-extinction of the Indian title in accordance with law and precedents, should be removed. The importance of this will be seen at a glance. The Indians also agreed to remove to and settle upon the Cœur d'Alene Reservation in the territory of Idaho.

Article 2 provides that the Indians will be permitted to select their farms and homes on a tract of land to be laid off and surveyed, and the boundaries marked in a plain and substantial manner, under the direction of the Secretary of the Interior, on said Cœur d'Alene Reservation; and it further provides that said Indians will take lands under and according to the allotment bill, which became a law during the Forty-ninth Congress; the allotments so to be made as not to interfere with the Indians now on the Cœur d'Alene Reserve. It is agreed that these lands shall be the permanent homes of the Indians forever.

Some of the Indians having expressed a desire to remove to the Jocko Reservation, on account of having relatives there, an article was inserted giving any Indian thus desiring the privilege of going there without forfeiting any of the benefits of the agreement, on giving reasonable notice of his desire after the ratification of this agreement. During the negotiations it was made known to the Commissioners, by the Indians, and white men who appeared to be friendly to them, that many of them were in the occupancy of small tracts of land on which they had made improvements, more or less valuable, and on which they placed great store. They feared that their removal would be an abandonment of their claims, and it was a serious obstacle in the way. On diligent inquiry we found that some of the locations were on railroad lands, some on lands claimed by white men as pre-emptors, some claimed by white men as purchased from Indians, and some on unoccupied Government lands. In view of existing laws as to Indian homesteads, and in view of principles of humanity and justice, we felt moved to make some satisfactory arrangement with regard to these lands, and hence it will be seen by reference to the agreement, article 4, it was provided, in case any Indians had settled on any of the unoccupied lands of the United States outside of any Indian reservation, and had made improvements thereon, etc., and residing thereon at the time of signing the agreement, he or they shall not be deprived of any right acquired thereby, etc.

In a letter we had the honor to address to the Commissioner of Indian Affairs we called attention to these claims, and took the liberty of suggesting that some suitable person be authorized to investigate them, to the end that such action might be taken as would secure a just and equitable settlement of the same, and we now renew that suggestion.

As before stated, these Indians number between 350 and 400. They have literally nothing, with the exception of a few inferior horses. In estimating the amount which they ought to receive as a consideration for the loss of their lands, we were governed by the stipulations with neighboring tribes when Governor Stevens was acting as commissioner, and endeavored to meet and negotiate with the Spokanes. This was about the year 1855. After mature consideration we concluded that the sum of $95,000, properly expended, would be a sufficient amount to remove them and provide for their future support, and accordingly we agreed to give them that amount, to be expended for the first year $30,000, for the second year $20,000, and $5,000 for each succeeding year for eight years, the money to be expended under the direction of the Secretary of the Interior, on their removal, in the erection of houses, assistance in breaking lands, in furnishing cattle, seeds, agricultural implements, saw and grist mills, thrashing machines, mowers, clothing, and provisions, and in any manner tending to their civilization and self support. It was considered that as the land on the Cœur d' Alene Reserve is rich and productive, the climate mild and healthful, this amount would be enough to settle them and soon make them self supporting, as the Indians on that reservation have become so without any aid.

Article 6 provides that the United States will furnish a blacksmith and a carpenter at its own expense to do necessary work and teach the Indians these trades. These Indians, though not unused to labor on account of their location and situation, have fallen into indolent habits, and will need some extraordinary inducements and good management to bring them to that state of activity necessary to successful farming, and hence as an inducement, which we are sure will prove highly successful, it is provided in article 8 that when the Indians have settled on their farms and shall have broken as much as 5 acres to each farm, the sum of $5,000 in money shall be distributed among them pro rata; and a further proviso gives the Secretary of the Interior the right to make this distribution of money pro rata whenever as many as ten families have broken that much land. It will be borne in mind that, as before stated, these Indians had never enjoyed treaty relations with the Government, and hence they knew but little about the forms, methods of procedure, or even the objects of a council with the authorized agents of the Government. It was known to them

that in treaties made with neighboring tribes, provisions of a special character for the payment of money to chiefs had been provided for, and therefore they expected that something of the kind would be arranged for them. They had six chiefs, four of whom are very old and entirely unable to make a support by their own labor. One of these old men thinks he was born prior to the time when Lewis and Clarke passed through their country. In view of all this, in article 9 we agreed that each of these six chiefs should be paid, in addition to the $95,000, $100 per annum for the period of ten years. The foregoing comprise all the material stipulations in the agreement. It will be seen that after a long, patient, and trying struggle, every chief, headman, and adult Indian, by fair and impartial persuasion, was induced to sign the agreement. All that the Government desired or can desire has been accomplished. The sum to be expended is small compared with the benefits derived, and yet it is confidently believed that it will be sufficient to rescue this unfortunate and unhappy band from want, misery, and final destruction. If this shall be the result the country will be fully compensated for all the trouble and all the expenditure attending the effort. We deem it our duty in closing this report to give some estimate of the proximate cost of some of the necessary articles to be furnished. As to the removal itself it will cost but little, as the distance from their present residence to Cœur d'Alene is short and communication easy. One good day's travel will accomplish it. Perhaps the most expensive outlay of money for any one article will be that of a mill. From a reliable mechanic now superintending the mill at the Flathead Agency, in Montana, we learn that the cost of a mill will be:

One 25-horse-power engine	$2,500
Saw-mill, fixtures complete	400
Set French burrs, with fixtures complete	300
Belting for both mills	150
One bolt, 8 by 9, with 3 feet of No. 6, for shorts	50
One smutter	150
Zig-zag separator	75
Construction of necessary buildings and material	3,000
Total	6,625

Work horses will cost about $100 each, and milch cows about $35 each. Suitable wagons can be placed on the reservation for about $100 each.

The amount proposed to be expended during the first year will be sufficient for purposes of removal, building a sufficient number of houses, which can be built for $150 each, putting up the mill, furnishing work stock, implements, and rations, and perhaps some amount will remain unexpended, which, together with the $20,000 to be expended in the second year, will furnish all that is needed to place the Indians in a line of self support. They will be with the Cœur d'Alene Indians, whose skill in farming and good example will serve to aid and stimulate them to the highest efforts.

Before leaving the Spokanes we learned that about forty families, about one-half of the tribe, were anxious to remove at once, and we were confirmed afterwards by a statement made by Chief Seltice, who visited the Spokanes after we were there. We communicated this to the honorable Commissioner of Indian Affairs, and expressed the hope that some means might be found to gratify the wishes of the Indians, at the same time expressing our doubts as to whether any such means were available until after the action of Congress.

Our experience has convinced us that delay in the execution of agreements and treaties have a most baneful influence on the mind of Indians. Naturally suspicious and despondent, accustomed to wrong, fraud, and bad faith on the part of the whites with whom he has been associated, delay creates doubt, which gradually ripens into unbelief, and finally into stubborn indifference and resistance.

We feel it eminently due that we express our thanks to Agent Benj. P. Moore, Ex-Agent Sidney D. Waters, Rev. J. M. Cataldo, and Rev. Al. Diomedi for valuable services and courtesies.

CŒUR D'ALENE.

As soon as possible after concluding the agreement with the Upper and Middle bands of Spokanes, and settling the business incident to the council, we proceeded at once to the Cœur d'Alene Reservation in the Territory of Idaho.

We went from Spokane Falls to Belmont, the terminus of the Spokane and Palouse Railroad, at which point we were met by parties with wagons who conveyed us to the town of Farmington, in Washington Territory.

On the next morning we proceeded to the Cœur d'Alene Reservation, 12 miles distant. The day was bright, and we had a fine opportunity of seeing the country, which is the finest in the West. We were informed whilst on our way that the chief, with an escort, would meet us and proceed with us to the De Smet Mission, where the council was to be

convened. The firing of a salute announced that the chief was near. We soon discovered the chief with about forty mounted men, armed with Winchester rifles, which they fired as the Commissioners approached. The chief dismounted, advanced in front, and welcomed the Commission to the reservation. The party then moved on, the soldiers marching on either side of the road. At the village the entire male population and many women and children had assembled. The chief, in a neat address, received the Commissioners, to which the chairman made reply, which was greeted with loud applause. The whole body of Indians then filed in front of the Commission, each one shaking hands with them and saying some kind words.

The reservation is one of the best we have visited. The Indians have good productive farms, good houses, barns, gardens, horses, hogs, cattle, domestic fowls, wagons, agricultural implements of the latest pattern, and indeed everything usually found on flourishing farms. The Indians are industrious, thrifty, provident, and good traders. They wear their hair short, and dress in citizen's dress from head to foot. They are polite, good natured, and ambitious to excel, and to do in all things as white men do, except to adopt their vices.

There may be a few exceptions, but so far as not to excite comment. Each one has a comfortable house on his farm, and nearly all have equally comfortable houses at the Mission, which together make quite a village. They remain on their farms during the week days, and on the Sabbath they repair to their dwellings at the village to attend religious services and see their children, who are at the Mission schools. Their land outside of the reservation, and much of it the best in that country, has been appropriated by the whites, and the Indians have never received a dollar.

They have been the friends of the white people in times of great trouble, and many owe their lives and property to the protection afforded them by these Indians against hostile tribes. As we were not to meet them in council, as they requested, until the next morning after our arrival, we were invited to visit their schools, which we did. Both school-houses are large, well constructed, and stylish in appearance. Inside they are neat, clean, and in every way suitable for schools. On entering the school room the boys arose and stood until we were seated. Paul Polatkin, a full-blood Indian boy of twelve years, stepped to the front and in a clear and distinct voice said:

"Honored Sirs: It is with feelings of great pleasure that I, in the name of my fellow-classmates, extend to you a cordial welcome to our school. We first thought that we would not have the pleasure of seeing you here, as it was rumored that you would call the chiefs to Spokane Falls, and there transact whatever business you had with them. We are glad you decided otherwise. It will give you a chance to see how our people live and support themselves.

"You will see at a glance that they 'earn their bread by the sweat of their brow,' as the land around here testifies. You will also see that here at school we are by no means idle, but try every day to add another grain of knowledge to our store. Hoping our exercises will please you, we welcome you to our school."

The exercises were of the most interesting and satisfactory character. The proficiency shown by these Indian children was as great as that of any school anywhere ever visited by the Commission.

At the close of the exercises Judge Wright thanked the boys for the cordial welcome they had given the Commissioners. He said he was delighted with their country. It was not only a beautiful country, but what was better, he saw that it was appreciated. He saw houses, farms, and other evidences of prosperity, which surprised him. His pleasure was greatly increased at seeing that Indian boys were the equals of the white boys in capacity to receive an education. He assured them that they had nothing to fear or to be ashamed of, and that if they continued in the path in which they were now walking they would reach a point where they would stand on equal ground with their white brethren, deserve and receive all the rights of American citizenship, and have opened to them all the avenues of fortune, fame, and happiness accorded the most favored people. In conclusion, he assured them that the Commissioners would do all in their power to protect the rights, advance the interests, and promote the prosperity of the Cœur d'Alenes.

The girls' school was then visited, and what has been said of the boys' school is equally applicable to this. On entering the school-room we were greeted with a song of welcome by the children and the music of the organ.

The voice of the Indian woman in singing is peculiarly beautiful and touching. There is a tone of gladness mingled with melancholy which is indescribable and can only be felt. This may be accounted for on the theory that traditional accounts of the sufferings of the race and the centuries of wrongs endured have made so deep an impression that even the dawn of a better and brighter day can not entirely obliterate. Every sensitive heart must have been touched to the core when they all sung together, "Will we

know each other there." When the singing ceased Mary Josette, aged twelve, a full-blood Cœur d'Alene, delivered this address:

"Respected Sirs: Allow me in the name of my dear little companions to offer you our glad greeting and to bid you a fond welcome to our happy convent home to-day. True, we are but simple little children of the forest, yet our young, untutored hearts have learned to love and revere the kind friends of our parents and tribe, and we trust that you too have come animated by that same worthy zeal which has distinguished so many of your predecessors—the future welfare of the Indians.

"Deeming that such is your motive, please accept our thanks for the deep interest you have manifested in our regard, and may God bless you and reward you an hundredfold for your noble and generous deeds and grant you a pleasant and prosperous journey to your far-distant homes."

One by one the classes were called and exercises given in spelling, reading, writing, geography, history, and arithmetic. Notwithstanding the native modesty and timidity of Indian girls in the presence of white strangers, they stood the test beyond any anticipation. They were not only ready in answers, but it was apparent to all that they thoroughly understood what they were doing and saying. Some of them solved with apparent ease problems in arithmetic which would give trouble to many graduates of Eastern female schools.

At the conclusion of the address Judge Wright said that the Commissioners had visited the boys' school and were delighted with the progress there shown, but he believed that the girls, if possible, excelled the boys. He did not know whether to attribute this expression of opinion to the fact of his gallantry. He believed, however, that it was conceded that the girls advanced more rapidly at school than boys; certain he was that he had never seen a school in his own section of the country which for good order and proficiency in study excelled this one. Any American having a daughter at school showing such proficiency in study as you have shown might well feel proud of her. He said, I see that you are not all Indians; some of you are half, and a few the children of white parents. It is indeed a pleasing sight to witness the children of the white and red races mingling together in the same school—all marching in the same path, with the same hopes, the same aspirations, the same flag of red, white, and blue, the same country, and all striving to reach the same blue heaven above. You should be thankful to the great Creator, the Father of us all, that he has sent to you in this wilderness the holy Fathers, Mothers, and Sisters to lead you in the paths of virtue and happiness.

Some of you missed a word or two in spelling. Do not allow that to discourage you, for there were some words given you to spell that would have puzzled either one of the Commissioners. And, besides, I think you knew how to spell them, and failed because of the natural timidity and modesty which is the glory of your sex. I had rather see a girl misspell an hundred words through modest embarrassment than see her spell a whole dictionary of words correctly, she lacking in that quality which so highly adorns woman and which renders her the object of our love and admiration.

In one of the selections read to us it is said "there are nights without a star and no days without a cloud." There have been times in the past when the Indian nights were without stars, and when the whole heavens above were dark with black and threatening clouds, but I feel glad to be able to say to you that it will be so no more. On this reservation the Indian problem will be solved at last. Here it is demonstrated that the Indians can work, and are willing to work and make a living for themselves, their wives, and their children, and that Indian children can stand side by side with the children of the Anglo-Saxons and compete with them in the race for knowledge and learning. The stars are beginning to appear in your heaven and the clouds are rolling by; even now the silver lining appears, and the glorious light of reason, science, and religion will ere long include your race in its broad scope and shed its benign rays on your humble homes.

At the appointed hour the Indians met us on the following morning; nearly the whole mail adult population were present. On the appearence of the Commissioners every Indian arose and stood uncovered until the Commissioners were seated.

Father Carnano was requested to open the deliberations with prayer.

The father stepped forward and every Indian dropped on his knees. A short and fervent prayer was offered, to which the Indians responded.

Judge Wright then addressed the Indians, fully informing them of the object of the visit. He gave them a vivid picture of the unhappy condition of their brethern the Spokanes, explaining to them the nature and terms of the agreement which the Spokane Indians had entered into to remove to the Cœur d'Alene Reservation. He also explained to them that their reservation was greatly desired by others, and how important it was that it should be occupied by Indians, and asked them to give their consent that the Spokanes and other scattered tribes should come on their reservation. He also spoke of the loss of their lands and its occupation by the white men; asked them

to speak out freely on all these and any other questions of interest which might suggest itself to their minds.

Dr. Daniels addressed them. He said he had been engaged in transacting business with the Indians for many years. He assured them of the good wishes of the Government, and stated that the Commissioners would endeavor in an earnest way to advance their interests and make them prosperous and contented

Chief Seltice arose and stated that what had been said made his heart glad; that he had waited anxiously for the coming of the Commissioners; that his people would listen attentively to any propositions which the Commissioners might be pleased to make and give them careful consideration; that his people would meet at night and talk together, and meet us again the next morning.

Judge Wright informed them that an agreement had been prepared, which would be read article by article, and fully interpreted and explained to them.

Before this was done Commissioner Andrews addressed the Indians in plain and earnest language, commending them for their industrious habits and friendly feeling toward the whites. He said he was surprised as well as delighted at the progress they were making, and predicted a bright and glorious future for them. At the conclusion of Commissioner Andrew's speech the Indians manifested their approval by their peculiar shout and clapping of hands. Chief Seltice in a few well-chosen words thanked, in the name of his people, the Commissioner for his words of encouragement and advice.

The agreement was then read to them by Commissioner Andrews, and each section carefully interpreted, to which the Indians gave marked evidence of approval.

Chief Seltice and his people manifested great concern about the future of their reservation. The clamor of the whites for the opening of the reservation had reached their ears and made their hearts heavy. The fact that all their land since this reservation had been taken from them without even the pretense of the asking, and the rapid increase of white settlers around, them were calculated to arouse their fears. They had no treaty relations with the Government and had no assurances of its fostering care. The visit of the Commission, and more especially when it was known tha its visit was of the most friendly character, filled their hearts with gratitude and hope, which were manifested in their faces, their tone, and their expressions.

When assurances were given them that they would be protected by the Government in their homes and reservation their gratitude knew no bounds, and it is the sincere belief of the Commissioners that Chief Saltice and every able-bodied man of his tribe could be relied on in any emergency in the defense of the flag and the country with as much certainty as any community in the Union. This is strong language, but it is true. Whilst we cannot speak so confidently of the other tribes and bands visited by the Commissioners, we express the confident opinion that our visit and negotiations with other tribes have greatly strengthened their respect for and confidence in the Government.

On the next day the agreement was again read over and explained, when the chief who had been empowered to speak for the tribe annouced that he and his people were ready to sign the agreement. Every man in the council followed, and over two-thirds of the male adults signed the agreement, and it was apparent that all would have done so had they been present.

The agreement was concluded at De Smet Mission, March 26, 1887. By its terms, for a consideration, the Indians cede, grant, relinquish, and quitclaim to the United States all right, title, and claim which they now have or ever had to all lands except that included within the boundaries of the present Cœur d'Alene Reservation.

The lands which they claimed, and held by occupancy, contained about 4,000,000 of acres. They had the same title to it which other Indians had, that is, the fee in the United States, and the occupancy, with all its incidental rights, in the Indian. The right of the Indians to their occupancy is as sacred as that of the United States to the fee.

They had been despoiled of this right without compensation from any source. Our instructions clearly contemplate a settlement of the claim based on the loss of these lands, and we were referred to Senate Ex. Doc. No. 122, Forty-ninth Congress, first session, which we examined with great care and attention.

On page 9 of this document will be found the petition of the Cœur d'Alene Indians, addressed to the President of the United States, setting forth their claim and the boundaries of the land in question. This country, as the petition alleges, "is one of the most valuable in Washington Territory, dotted by numerous and valuable wheat farms, valuable forests of timber, saw-mills, gold, silver, and lead mines, the military post at Cœur d'Alene, and numerous thriving towns and villages. The Northern Pacific Railroad runs directly through it, and much of the land owned by that corporation was the land of these Indians.

The history of the failure of Governor Isaac J. Stevens in 1855 to meet and negotiate with these Indians is well known to the country.

At De Smit Mission we were furnished with the original agreement made and concluded on the 28th day of July, 1873, at Lutah or Hangman Creek, in the Territory of Idaho, by and between John P. C. Shanks, John B. Monterth, and T. W. Bennett, special commissioners on the part of the Government of the United States, and the chiefs and headmen of the tribe of Cœur d'Alene Indians.

We had a copy of said agreement prepared and herewith submit the same as part of this report.

Reference is made to this paper and also to the fact that these Indians were recognized by the Government in 1855, as being entitled to consideration when Governor Stevens was constituted a commissioner to deal with certain northwestern tribes in order to show that their claim to compensation had been heretofore entertained. By reference to the copy of the agreement, it will be observed provision was made for a reservation for the Cœur d'Alenes out of a portion of these lands, and the tribe relinquished to the Government *all lands heretofore claimed by them lying and being outside of said described reservation.* The boundaries are then given in detail, and it will be found that they substantially agree with the boundaries given in the petition of the Indians.

As a consideration for the above cession it was agreed that they should be paid for improvements made on the lands lying in Washington Territory in case by survey of the line they were found to be in that Territory. In addition, the Government agreed to furnish the Indians with 10 wagons, (2-horse), 10 sets of harness, 5 sets plow harness, 50 plows, 10 pair American mares, 10 whip-saws, 10 cross-cut saws, 2 mowers, 2 mowers and reapers combined, 1 set blacksmith's tools, 2 one-horse rakes, 20 harrows, 10 grain cradles, to construct one saw and grist mill, to build a school-house with apartments for males and females, one boarding and lodging house, one smith's shop, and in addition to all this the United States agreed to fund in United States 4 per cent. bonds the sum of $170,000, interest to be paid annually for the benefit of the Indians, with right on the part of the United States of paying the principal at any time after 20 days.

This agreement was formally signed by three commissioners and witnessed by R. B. Whitman and T. M. Cataldo, S. J., and by all the chiefs and headmen of the Coeur d'Alene tribe.

At the time we had no means of ascertaining whether this agreement was submitted to Congress for its ratification, as was provided for therein. It was of service, however, in aiding us to what amount of compensation should be given as consideration for the lost lands. The amount necessary to fulfill the stipulations of this unratified agreement is larger than that which your Commission agreed to give in this one.

The third article of our agreement gives the consent of the Coeur d' Alenes to the removal to their reservation of the Spokane Indians, in accordance with the terms provided in the agreement with the Spokanes and the fourth article, that the Calespels and any other non-reservation Indians may also be removed to that reservation.

The anxiety of the Indians about their reservation and their fears that it might in some way be taken away from them, their unexampled good conduct, their friendship for the neighboring whites, displayed on a late memorable occasion, their rapid advancement in self-support and civilization unaided by the Government, their willingness to allow their reservation to be filled up with Indians, the confidence they repose in the Government to settle their claim on its own terms, all conspired to cause us to put in the fifth clause, which provides that their reservation shall be held forever as Indian land as homes for the Coeur d'Alenes and such other Indians as may be removed thereto, and that no part of the reservation shall ever be sold or occupied, open to white settlement, or otherwise disposed of without the consent of the Indians.

It may be said that this was unnecessary, inasmuch as no such thing would happen; but the loss of their former possessions and other causes had so excited their fears that it was concluded, in order to allay suspicion, and in as strong a manner as possible, bind the Government to that good faith which the Indian prizes so highly and which he thinks has been violated so frequently.

Article 6 provides that the sum of $150,000 shall be expended under the direction of the Secretary of the Interior, as follows:

For the first year, $30,000; and for each succeeding year for fifteen years, $8,000.

These Indians had everything which they needed or wanted, or if not it was within their power to procure it, except a saw and grist mill. It was agreed that the construction of this should be the first item of the expenditure, the cost of this to come out of the $30,000, together with the pay of the engineer and miller. For the probable cost of the mill we beg leave to refer to our report as to the Spokane Indians. The balance of the money provided for is to be expended in such useful and necessary articles as shall best promote the progress, civilization, comfort, improvement, and education of the Cœur d'Alenes.

Article 7 deserves some comment and explanation. When it was ascertained that these Indians really needed and desired nothing in the way of clothing, food, agricultural imple-

ments, or school facilities it became a question with the Commission as to the method proper to be pursued in the payment of the amount in satisfaction of the claim. From information derived from the best and most reliable sources we learned that the police regulations were of the highest order, which results in excluding ardent spirits from the reservation; and that long experience in self-reliance and traffic with the neighboring whites had made them cautious, shrewd, and provident in the use of money. We learned that their trade in one town adjacent to the reservation amounted to about $25,000 yearly. We therefore conclude that justice requires us to recognize these qualities and facts and adapt our course to the advanced condition of the Indians. Hence it is provided in this article 7 that if it shall appear to the satisfaction of the Secretary of the Interior that in case the Indians need none of the money expended as provided in article 6, they being already provided with such things, and further, that they will judiciously use the money, the same may be paid to them in cash pro rata. It will cost the Government no more to pay in cash than in supplies, and, besides, the trouble will be much diminished.

All money not expended in any one year, according to the provisions of the agreement, is to be kept for the use of the tribe, and that the wishes and needs of the Indians are to be consulted when purchases are made for them.

In the employment of engineers, millers, mechanics, and laborers of every kind preference is to be given to Indians qualified to perform the work, and all persons employed are required to teach the Indians these trades and vocations. We were assured that in a short time Indians on the reservation would be fully qualified to do all these things, and we considered this an important provision, tending to their rapid self-support.

It was further agreed that the United States would furnish a competent physician and medicines, a blacksmith, and a carpenter.

Article 12 makes provision as to marriages between Indian women and white men similar to that made by the commission with the Chippewas of Minnesota.

This provision and the one allowing certain white men, four in number, who have married Indian women and who are now residing on the reservation, was embodied in the agreement at the special instance and request of the tribe.

As to article 13, it is proper to state that this was also embodied at the earnest request of the entire tribe.

The fathers who went among these Indians at an early day found them a fierce, wild, and ignorant people in their aboriginal state, and have, by patience, toil, and care brought them to their present advanced state of Christianity and civilization. A better ordered and better behaved Indian community can nowhere be found. They are active, industrious, thrifty, and self-supporting. Their respect for the law, their loyalty to the country, and devotion to religious principles and practices are greatly to be commended. All this they attribute to the work of the fathers, who have expended in building of churches, school-houses, and other buildings, opening and fencing farms, not less than $20,000. On these farms the Indians have learned the art and science of agriculture. Both schools, male and female, are filled with Indian children walking in the same path, not only receiving good educations but learning all the practical duties of life.

As has been stated before, the chief matters of concern which occupied their minds was the preservation of their homes and the perpetuation of their church and school facilities.

It appeared that they had years ago given their consent to the provision contained in this article, and wishing it embraced in a more lasting and durable form they requested the insertion of that part of the agreement.

With all the facts before the Commission, and being on the ground, we deemed it of the highest importance to the Indians and their posterity that this arrangement should be made. It will be seen that the title in fee is not touched, and that the right of use is all that is conceded, or in other words, to use the expressive language of the Indians, they simply "lend the land" in order to secure the education and civilization of their children.

After concluding our labors with the Cœur d'Alenes we returned to Spokane Falls in order to arrange for a visit to the Calespels or Lower Pend d'Oreilles.

CALESPELS, OR LOWER PEND D'OREILLE.

SAND POINT, IDAHO.

The snow on the mountains made it impossible to meet these Indians by land at their usual place of residence, which is in a valley on the Pend d'Oreille River, about 60 miles below Sand Point, where the Northern Pacific Railroad crosses Lake Pend d'Oreille. They can be reached by small boats going down the river, but travel in that way at this season of the year was very uncomfortable and not unattended with danger. Information derived from persons acquainted with these people, their habits, and probable loca-

tion at that time, induced us to have them meet us at Sand Point, in the Territory of Idaho. In addition to the above, we ascertained that the cost of visiting these people at their homes would greatly exceed that of having them come to Sand Point, and that there was no suitable house at their place of residence in which to assemble, and no place where the Commissioners could stay during the negotiations. Accordingly, we communicated to Mr. Louis Lee, of Rathdrum, Idaho, a request that he would visit the Indians and persuade them to meet us at Sand Point. This he promptly agreed to do. The day being fixed, Mr. Lee, at our request, met us at Spokane Falls after his return, and immediately we started for Sand Point. To aid us as much as possible, we requested the presence of Maj. Peter Ronan, Father Van Gorp, and two Indian chiefs from the Flathead Agency, that being the place to which we hoped to remove the Calespels. We arrived a few days in advance of the coming of the main body. A few came in and reported that they had heard of our coming, but that Victor, former chief, and a party of braves were off hunting in the mountains. Victor, whose Indian name is Petol, had recently abdicated in favor of his eldest son, Marcella. However, his influence still remains, and the Indians were not willing to proceed without his presence and advice. The Commissioners also desired his presence, having heard from good authority that he had recently expressed a willingness, on reasonable condition, to consent to removal of himself and tribe to the Jocko Reservation. Marcella, his son, and now one of the two chiefs of the tribe, had failed to put in his appearance; and, as it was understood that the chiefs were to conduct and conclude the negotiations, nothing could be done in his absence. It was represented to us that he was an obstinate, untamed, and contrary chief, and it would be difficult to make an agreement with him. All this caused a most unpleasant delay. All that could be done under the circumstances was to wait with that patience and forbearance which are indispensable qualities in one seeking business with untutored Indians. "They take no note of time" and have no idea of such a thing as haste in dealing with Government officials. They place a high estimate on their own importance when called to council with Commissioners, and spend much time in secret conclaves one with another, and always come with reluctance and at a snail's pace to the first meeting. The delay, however, continued, and information was obtained that Victor and his party of hunters could not be found. This induced the sending of other messengers with strict instructions, which resulted in bringing him in.

Nearly the entire tribe appeared on the field, numbering, all told, about 40 adult males, but only about 31 appeared in council. The total number, including men, women, and children, is estimated at about 150. Whilst, for reasons given, we did not see the lands on which they lived, from reliable persons who are acquainted with them, and from the Indians themselves, we learned that there is but little farming land; that they have but few houses or cleared land; that their country overflows every year, and that the only thing on it that is of any value is some hay land. They live almost exclusively by hunting, trapping, and fishing, and the two former sources are well-nigh exhausted. The whites who live about them also live by hunting and trapping, and this adds to the rapid destruction of game. White men are constantly going by the river through the country seeking game and minerals, which are found beyond the reservation, and constant disagreements are the result. Indeed, the numerical weakness of the tribe is the only safeguard against danger. The white population is also sparse, owing to the nature of the country. These Indians are naturally vicious and combative, and when under the influence of intoxicants are absolutely dangerous neighbors. Whilst we were at Sand Point, in spite of our protestations and threats of prosecution, some of them obtained whisky from white men, which resulted in personal fights among themselves and the whites. It will be thus seen that in addition to the information furnished in our instructions and reports which reached us prior to our meeting, actual observation commenced, of the pressing necessity for their removal. We therefore determined to exhaust every proper and legitimate resource to secure this end. Chief Victor having abdicated in favor of his son, Marcella, we found but two chiefs, to wit, Marcella and Michael. These men are totally different in their habits and views of life. Marcella attached to the wild roving life which his band leads, and Michael, with short hair and dressed in new, clean citizen's clothes, leaning to the ways and customs of the whites. The proceedings had not gone far until it was believed by the Commissioners that a large number of the Indians were pleased with the propositions made them, and were willing to remove. Victor and his son were the impediments. Nicola, a plausible speaker, had been engaged by them to do the talking. At first, as we understood, he was inclined to accept the offer of the Government, but Victor and Marcella by some means brought him over. They made an effort to win Chief Michael also, but they failed. He was silent for a long time, and seemed reluctant to antagonize the others, though his band, who constitute a majority, were fully in accord with him. At last he spoke out freely in favor of accepting the offers, and in behalf of his entire band, and with their approval, signed the agreement. His head-man, Pierre, followed, and afterwards Big Head, Josep,

and Antoine. All of Michael's band would have signed the agreement, but they understood that the negotiations would be made with the chiefs only. He represents a clear majority of the male adults, and we feel sure that very many of Marcella's men would have agreed but for an indisposition to antagonize him.

After Michael had signed the agreement Marcella waited on the interpreter, Michael Revais, at his room, and in substance said to him that he, Marcella, had favored the agreement from the first time he heard it read; that he still favored it, and that his refusal to sign it was owing solely to his reluctance in opposing the views of his father, Victor. He said that his father was very old, and that he was afraid it would hurt his heart if he opposed him. He added that he would get the band together when they returned home, and then he would go up to the Flathead Agency and sign the agreement. He said he would do this in one month from the day the Commissioners left Sand Point. He requested the interpreter to communicate these words to the Commission, and accompany it with the request that they leave a copy of the agreement with Maj. Peter Ronon, agent for the Flathead Indians. We complied with the request, and when the paper is forwarded we will make it a part of this report.

In order to facilitate the building of houses, fences, etc., on that part of the Jocko Reservation to which it was understood these Indians would remove, and because of the great distance they would be located from the agency, it was agreed that a saw and grist mill should be erected for their use, and, as will be seen in our report on the Flathead Agency, this mill may be used also for the benefit of the Kootenais now on said reservation.

An estimate of the cost of a mill, such as will be needed, is made in our report on the Spokane Indians, to which reference is made.

It was further agreed that they should be assisted in breaking and fencing not less than five acres of land for each family, and furnished an engineer and miller, a carpenter and blacksmith, and each family furnished with two milch cows and two work horses, a wagon and set of harness, stoves for each house, plows, and necessary agricultural implements; to make provision for taking care of the old, sick, and infirm, and to furnish them with good clothing and medicine until such time as they may become self-supporting, but not to exceed five years. It was also agreed to furnish them with necessary seeds for the first year, and to encourage them in habits of industry it was agreed to furnish them, from time to time, with such other useful and necessary articles as will best tend to promote their advancement, in the discretion of the Secretary of the Interior. The Indians are to have preference in being employed in doing all kinds of work which they are capable of doing. It was also agreed that $100 per annum should be given to Victor during his life. Victor is quite old and in feeble health, and the amount will serve to support him during the short time he will live, in the course of human life.

Some of these Indians, having settled on and made some improvements on the places where they now reside, were very anxious not to lose them, and it was therefore agreed that such might sell and dispose of their places, or such rights as they had acquired therein, and receive pay for the same.

Article 5 provides that one-quarter section of land in the neighborhood where they settle may be set apart for educational and religious purposes, as it was supposed that they, on account of their distance from the schools and churches, would need these advantages in their midst.

In consideration of these things, they agree to cede to the United States all their lands and to remove to the Jocko Reservation, with a proviso that if any Indian or Indians should prefer to remove to Colville, on Cœur d'Alene Reservation, they might do so without forfeiting any of the rights or advantages of the agreement.

As before stated, this is a small band of Indians, but the peace, good order, and safety of the people in their vicinity, as well as the safety and happiness of the Indians themselves, imperatively require their removal to some place where they will be under the control and protection of the Government until such time as they may become civilized and self-supporting. Their entire destruction at an early day will be the consequence of their present position. Our stay with these Indians was necessarily protracted beyond what we desired or expected but our knowledge of the anxiety of the Government that something be done for them, and the urgent necessity for it, which actual observation of them demonstrated, moved us to the utmost exertions to carry out the policy of the Department.

The amount which will be necessary to carry out the provisions of the agreement is not more than sufficient to secure them civilization and self-support, nor was it believed to be more than the value of the land claimed by them. Their consent to remove at all was given with seeming reluctance, and for a long time they obstinately demanded a reservation within the boundary of the lands claimed by them.

ADDENDA TO REPORT ON THE AGREEMENT WITH THE CALESPELS.

Since making the above report we have received from Mr. Louis Lee, of Rathdrum, Idaho, a letter dated June 17, 1887, which makes it necessary to add this to the report. Mr. Lee was present, at our request, during the negotiations with this band, and his long acquaintance with them induced us to write him a letter, to which he replies in substance as follows:

He states that he visited the Calespel Valley and saw Chief Marcella and advised him to go to the Flathead Agency, according to his promise, and sign the agreement which had been left with Agent Ronan. He said the chief seemed surprised and wished to know what the interpreter (Michael Revais) had told the Commissioners. Mr. Lee says: "I told him what Revais told you (the Commissioners) in my presence, that Marcella said that if the Commissioners would leave a copy of the agreement with Major Ronan, of Flathead Agency, he, Marcella, would go there and sign." The chief positively denied having made any such promise. He further said, "that he would not go to the Flathead Agency unless the Great Father took him there by force." Mr. Lee says further that many of the older Indians asked him if he thought the big Commissioner told the truth when he promised all these things, and they further said that they had been told that all that was wanted of them was to leave their country for a short time so that the whites might take it, and then their only chance would be to stay on the reservation. They did not want to make war on the whites.

Mr. Lee adds, that if the Indians who belong to Chief Michael's band, who signed the agreement, could be moved at an early day, and be supplied according to the agreement with the necessaries provided for, it would dissipate the doubts of the dissenting minority, and that by spring the whole tribe, including Chief Marcella, would remove.

We believe that this would be the result, as Mr. Lee informs us that the water on the reservation where they now are is 15 feet higher than it was last season, that they have lost all their crops, and that they will be in want by the time that snow flies.

He further states that many of Marcella's band would go if they were not afraid of their chiefs and young braves.

FLATHEAD OR JOCKO RESERVATION.

Having concluded our work with the Calespels, we left Sand Point, Idaho, on the 21st day of April, and arrived at Arlee, a station on the Northern Pacific Railroad, on the night of that day. We found in waiting for us Mr. Thomas E. Adams, the clerk of the Flathead Agency, with a conveyance, and we proceeded immediately to the house of Maj. Peter Ronan, the agent for this agency.

On the morning of the following day Chief Arlee, of the Flathead tribe, paid us a friendly visit. The agency is situated near the south border of the reservation.

The Saint Ignatius Mission, 20 miles from the agency, was deemed, from its more central position, the best place for the Indian council.

It required time to give the different tribes notice of time and place of meeting, as some of them resided upwards of 90 miles from the agency.

The following Tuesday (April 26) was therefore agreed upon as the day of meeting, and messengers were dispatched to notify the various tribes.

Before leaving Sand Point we sent a dispatch to Agent Ronan, notifying him of our coming and of the day we had named for the council.

On Tuesday we were conveyed in private conveyances by Agent Ronan to the Mission, being accompanied by Clerk Adams, Dr. Dade, agent physician, and the Government interpreter.

This gave us an opportunity to see a large part of the reservation, more especially that part occupied by the Flatheads, who mainly reside on this part of the reservation. The Pend d'Oreilles reside near the Mission, and the Kootenais still farther off near Lake Pend d'Oreille.

Saint Ignatius Mission is located in about the center of the Indian population of this reservation.

The Commissioners were driven through the Jocko Valley and along the foot-hills skirting the valley, which is traversed by fine irrigating ditches constructed for the use of the Bitter Root Flatheads of Charlos's band, who are now settled by Agent Ronan, and who occupy cozy houses, surrounded by well-fenced fields, which the Indians were engaged in planting and seeding.

An account of the trip by an eye-witness says: "Turning off from the line of the Northern Pacific Railroad at Ravalla Station, and while driving across the divide leading to the Mission, the party were met by a large band of armed Indians, headed by the Indian police, dressed in their bright uniforms. Upon meeting the Commissioners the

Indians ranged themselves upon each side of the carriages and fired a salute, giving a wild whoop of welcome, regardless of the plunging and rearing of the excited horses attached to the carriages in which the gentlemen of the Commission were driven. Arranging themselves on each side of the carriages, alternately firing their guns and ringing out their fierce whoops, the carriages dashed over the hills, followed and preceded by the wild escort."

On arriving at the Mission the party were welcomed by loud strains of music, pealing out from twenty-three brass instruments, drums, fifes, and clarionets, the soul-inspiring notes of the Star-Spangled Banner, rendered in excellent style by as many Indian boys from the veranda of the college.

In the evening, while discussing their cigars, the Indian band, composed of boys whose ages range from 11 to 18 years, gathered under the windows and gave a serenade. After rendering several airs, such as Hail to the Chief, Bonnie Blue Flag, etc., Judge Wright stepped to the door and made the following remarks: "My young Indian friends, in behalf of my associates of the Northwest Indian Commission and other gentlemen present, I return thanks for the beautiful serenade we have just listened to with delight and astonishment. Your performance is indeed astonishing, and furnishes an evidence of the talent which the Great Creator has given you to acquire and master music with your other educational accomplishments. As the thrilling strains echo and vibrate this night under our windows, beneath the shadows of the grand old Rocky Mountains, it furnishes a good contrast to a few years ago, when these gorges, glens, and lonely valleys echoed only to the howl of the prowling wolf and other wild animals or the terror-striking war-whoop of your ancestors. What a deep and lasting debt of gratitude you owe to the pains-taking patience of the good Father and the kind protection of a liberal Government, who have made it possible for you to advance from savage barbarism to education and civilizing pursuits, and also to the mastery of music, the inspiring strains of which touch and thrill the hearts of your visitors of another race.

"Again, I thank you and bid you good night. May you all live to manhood and to old age, a pride to your brave race and a source of gratification and joy to the fathers of St. Ignatius Mission, to whose attention, teaching, and devotion you owe your present elevation and refinement of character and morals."

The Commission, by invitation, visited the various workshops and mills connected with the industrial system of the mission schools.

These consisted of a saw and grist mill, printing office, tin shop, shoe shop, museum, saddle and harness shop, carpenter shop, and blacksmith shop. Specimens of industry were exhibited which demonstrated the capacity and skill of the boys. Everything is conducted in an orderly and systematic manner. On the farms the boys are also taught and practiced in all the details of the cultivation of the soil.

We were entertained by recitations in the various studies at the boys' school. An Indian boy, aged fourteen years, read an address to the Commission as follows:

"*Honorable Gentlemen of the Indian Commission:*

"Allow me to thank you for your kind visit to St. Ignatius Mission, and to welcome you in the name of my companions to our school. We look upon you as the chosen representatives of our Great Father in Washington, who so kindly cares for the children of the Indians and spares no expense to educate us in the same manner in which white boys are educated. In honoring you we mean to honor our Great Father, and to show him our gratitude for the great benefits which we are receiving from his fatherly kindness.

"We have learned from our father superior how kindly you have spoken to all the Indians west of us, and especially how pleased you have shown yourselves to be with the progress of the Indian children of the Cœur d'Alene school.

"We hope that you will be pleased with us also. It will encourage us in our efforts to learn, and it will also be a source of gratification to our teachers. However, we are but poor and timid Indian children, not quite at home in the ways and manners of white boys, and we hope you will kindly overlook our shortcomings."

To this the chairman replied as follows:

"My Young Friends: Every friend of the Indian and every generous human heart would rejoice to see what we have seen since we came on this reservation. The degree of progress which is manifested here gives promise of a bright future for you and your race. In the name of the Commission I thank you for the address of welcome you have made us, and I can say without flattery that you compare well and favorably with other schools we have visited in our various travels. You are greatly favored indeed. I can assure you that I never attended a school, and I doubt if any white man present ever attended one, with better school facilities than this. Some of you no doubt dislike to be at school. This should not be so. All whom you see here had to go through the same process through

which you are going. Continue on in the way you are now traveling and your course will be onward and upward. The great Government whose flag floats over your buildings is your friend. No pains will be spared to advance you. We promise you all the encouragement and aid in our power, and we will look forward to the day with pleasure when the Indians of the Jocko reserve will be an educated, industrious, and independent people."

After being shown through the girls' school, which was perfect in all its arrangements, and hearing the various classes recite, we were satisfied that nothing was wanting. A little Indian girl read to us the following address:

"Honored Sirs: We are rejoiced to see you in our midst and bid you a cordial welcome. We most sincerely thank you for the honor that you bestow upon us to-day by your presence and the interest you thus manifest in our regard. We are confident, honored sirs, that you wish to promote the welfare of the Indians. It is this and your great condescension in deigning to visit us that gave us the courage to present ourselves before you and show you the little we know. We are but little children of the mountains aiming to become one day useful and industrious. We can not be learned, but we wish to be good, to please those who take an interest in the cause of our education and to repay them for their kindness to us."

To which Judge WRIGHT replied:

"We are well pleased with what we have seen and heard. You have most excellent advantages provided for you here and you show that you appreciate them. You should continue to do so. If you do your advancement is assured. Respect, love, and obey these good sisters who have devoted their talents to your service and you will grow up wise and virtuous women, an honor to your families, to your school, and to your race.

"We thank you for your kindness of welcome, and will be happy to do all we can to advance your prosperity and happiness."

We give these particulars more for the purpose of laying before you the actual situation of the Indians and the rapid progress they are making than for any other purpose. Each tribe of Indians should be dealt with according to its actual condition, and these we found so different that we have endeavored in this report to accompany a history of our negotiations with such facts and circumstances as may throw light on their present state and condition.

The council met in the evening of the 26th. The three tribes, Flatheads, Pend d'Oreilles, and Kootenais were fully represented. The large school room was filled to overflowing, and many women and children occupied seats on the stoops and verandas outside the council room and grouped around in the boys' playground.

All classes were represented, from the oldest to the youngest, from the well-clad, thrifty looking farmers in business suits to the wild followers of the chase, some in gaudy blankets with broad, beaded belts, others in gaily-trimmed buckskins with beaded leggings. It was, however, noticeable that the civilized dress largely predominated, both with males and females. Some had their dwellings around the mission and the agency, while others had come long distances to meet the Commission.

The dwellers around the Pend d'Oreille River and around Flathead Lake, the tillers of the soil from Hot Springs and Camas Prairie, the Indian cattle-kings from Crow Creek and the Muddy, lonely wigwams in narrow gorges, far-away glens by sparkling waterfalls, and wild, remote spots outside of civilized intercourse had been notified of the coming of the Commission.

The object of the visit was made known and the duties and power of the Commission clearly stated. There was but little difficulty in obtaining the consent of the confederated tribes to the removal of the Calespels and such portion of the Spokanes as might desire it to their reservation. They also consented that any other non-reservation Indians might be removed to their reservation on such terms as might be agreed upon by the United States. This was done on account of reliable information received by the Commission as to a small band of Kootenais whom it appeared had received but little attention from the Government or its agents.

Our information with regard to these Indians was derived from Rev. Louis Jacquot, of De Smet Mission, Cœur d'Alerne Reservation. The Cœur d'Alernes in their agreement with us also gave their consent to the removal to their reservation of all non-reservation Indians in that part of the country. These Kootenai Indians live in northern Idaho, along and near the international line. They are called Lower Kootenais, or Flat Bows. A part of them are in the United States and a part in Canada (British Columbia). Those in the United States number about 200. Up to this time they have had no treaty relations with the Government and have received no aid. No agent has ever visited them officially. Their country is being slowly taken up by whites, and they are now confined along the bank of the Kootenay River. They are very destitute, having nothing to rely upon for a support but fish, berries, and game. The land on which they live, beginning

at Bonner's Ferry, is one vast swamp, unfit for cultivation. At times it appears as one vast lake. He said they were very poor and miserable, and that they expressed their surprise and sorrow that no attention was paid them. The statement of the priest touching the condition of these poor people excited the sympathetic interest of the Commissioners, and it was determined to call the attention of the Department to it.

We have heretofore given an account of the schools and other facilities afforded the Indians on this reservation by those in charge of the Fathers and Sisters of St. Ignatius Mission. The Indians highly appreciate these advantages and manifested the most intense anxiety that they should be fostered and continued.

It was at the earnest request of the Indians themselves that article 11 was incorporated into the agreement. In addition to these, after a careful inspection of the buildings for schools and church purposes, the various mills, shops, barns, agricultural implements and products, together with the farms themselves, all of which has caused an expenditure of from seventy-five thousand to one hundred thousand dollars by the society in charge, we felt that it was nothing but absolute justice that this provision should be made. The Jocko Reservation of itself is a most desirable place for Indians, and, with St. Ignatius Mission and its appliances for educating and civilizing the Indians, it appears to be perfect. Without the advantages afforded by this mission in the past and in the present, it is certain that these Indians would be far from that promising condition in which they are now found.

The land covered by the agreement is already occupied with the various improvements of the society, with an occasional Indian settlement, which latter are fully protected by the last clause in the article.

The prospect of an early removal of other tribes to this reservation and the consequent necessity for houses, fences, and, together with the fact that a large portion of the tribes now on the reservation live at a great distance from the agency where the mill is located, and the earnest desire expressed by the Indians for the erection of another saw-mill, accounts for article 3. Our own observation and knowledge, together with the statement of the agent, satisfied us of the necessity for this provision.

A large number of bridges have to be kept up on this reservation in order to facilitate travel from one portion of it to another, and this was also a consideration making this provision necessary.

The Commissioners beg leave to express their obligations to Rev. Leopold Van Goop, S. J., and his assistants at St. Ignatius Mission, for courtesies and valuable assistance. We are also under great obligations to Agent Ronan and his clerk, Thomas E. Adams, of the Flathead Agency, for their kindness and valuable services to us; Major Ronan, whose long experience as United States Indian agent, and his constant vigilance over the interests of the Government and welfare of the Indians in strict obedience to his instructions from the Commissioner of Indian Affairs, offered us every facility in his power. Having concluded negotiations at the Jocko Reservation, we took passage on the Northern Pacific Railroad for Duluth, Minn., the nearest point on the Northern Pacific to reach the Lake Superior band of Chippewa Indians, at Boise Forte and Grand Portage Reservation.

BOISE FORTE RESERVATION.

Previous to our departure from the Flathead Reservation we addressed a letter to Agent Gregory, of the La Pointe Agency, informing him of our intended visit to these reservations (which are under his charge), and requesting him to meet us at Duluth and accompany us with his interpreter. Immediately on our arrival at Duluth we informed the agent by telegram of our arrival. The La Pointe Agency is at Ashland, in Wisconsin, about two hours' travel by rail from Duluth. We ascertained that the agent was at the Fond du Lac Reservation on official business, and we awaited his return until the following Tuesday, when we started for Bois Forte, arriving at Tower, a village on Lake Vermillion, on the evening of the same day. Agent Gregory, through the agency farmer, Mr. Bell, had sent messengers to the Indians notifying them of our coming and summoning them to meet us at the place where the agency buildings are situated, on Vermillion Lake.

The great body of the Indians were around Nett Lake, a distance of perhaps 60 miles from the agency buildings, whither they would come in canoes through the lakes and rivers on the reservation. Many of the Indians, as we learned, were still further off. It required time and patience to get them assembled. We went to the agency in birch-bark canoes, but finding few Indians had arrived we returned to Tower and awaited until we learned of their arrival. Upon our second visit we found a majority of the tribes represented, and we at once proceeded to lay before them our business. We had prepared an exact copy of our agreement made with the Mississippi and Pillager Indians, which is herewith submitted, and which was read and carefully interpreted to them.

In the address made to them each article was fully explained, and the great advantages it offered urged in the strongest manner in our power.

They listened attentively to all this, but it soon became apparent that it would be difficult if not impossible to overcome their repugnance to leaving their native grounds. It was also believed that the Indians had been strongly persuaded by persons having influence with them not to agree to remove. The reservation, with the exception of the Grand Portage Reserve, is perhaps the poorest and most worthless one we have visited. The country is covered all over with lakes, rivers, and swamps. Both climate and soil absolutely forbid the idea of any one making a support by agricultural pursuits, and the same may be said as to stock raising.

So far as our information extends from actual observation and the report of others, potatoes is the only product which can be depended upon.

There are valuable iron mines in the vicinity, but they are situated on lands heretofore ceded by these Indians to the United States and now held by large companies and individuals. There is little if any valuable pine timber on the reservation. Indeed there is nothing on it to attract white settlements, as yet discovered. The white people do not desire to possess it, and it can not now be seen why they should ever in the future desire it.

Under these conditions and surroundings we expected to find the Indians in a deplorable condition, and we naturally hoped that the enticing propositions contained in the agreement would be eagerly seized by these people. Good homes on rich lands, agricultural implements, stock, schools, churches, and indeed inducements which would have influenced a majority of poor white men to remove, seemed to be regarded by them as nothing.

We were agreeably surprised when we met these Indians. As a general thing they were well clad, in good health, cheerful, and well satisfied.

The great number of white men now visiting the country adjacent to them in search of iron has given many of them employment, for which they receive fair wages. The chief mode of travel is by birch-bark canoes, which the Indians make and sell to the whites and then the Indians are hired to paddle the canoes and act as guides. In this way they make money, with which they purchase clothing and provisions for themselves and families.

The lakes and rivers on the reservation abound in fish, and there are some wild berries, which the Indians gather in season. The wild and worthless character of the country tends to preserve the game. With these sources they are enabled to live. They appeared to be free from disease and most of them were willing to work. There is a small school at the agency, which at times is attended by a few children.

When we had concluded the reading of the agreement and our explanations they asked to be allowed to consider until the following day, to which we readily assented. At the next meeting we went over the whole ground again, explaining fully each article of the agreement, telling them that if they so preferred they might be removed to either one of the reservations in Wisconsin. They made no objection to the terms offered them, but said that the Government had failed, and refused to comply with its agreements and treaties made in the past; that they intended to remain on their land until all past treaty stipulations had been complied with on the part of the Government. They complained that white people were now making vast fortunes out of the lands formerly ceded by them, and asserted that at the time of the treaty of 1866 they had been promised that if mines were found to exist on the ceded territory they should be paid more for it.

They were reminded that they had made but one treaty with the Government, that of 1856; that no complaint had been heard before this of a refusal on the part of the Government to comply with the terms of that treaty; that they had been given yearly the amounts due them under it and that neither the Commissioners nor the authorities at Washington knew anything about the outside promises made to them at the time of the treaty, but that in order to cover that objection a claim should be inserted in the agreement providing for the payment of whatever sum might be found due under former treaty.

It was then said by them that some of them had settled upon Government lands in the vicinity of the reservation and were entitled to homesteads, and they did not wish to give them up. The Commission then agreed to put in an article covering this objection. Lastly, they urged that they had been informed that the White Earth Reservation was a very sickly country and they would all die if they went there. This objection was dissipated by a statement from the interpreter, a half-breed, who had been on the reservation and knew the contrary to be the truth. Finally, they said that however these things might be, they did not wish to remove at all.

These Indians are friendly and well-behaved, and, so far as we could learn, gave no trouble to the white people. Indeed, from what the Commissioners saw and heard, they

were impressed with the belief that the white people generally are willing for them to remain where they are if they do not really desire it. The white people, as a general thing, spoke well of the Indians and they mingled and traded with each other in the most friendly manner. Their proximity to the whites in and around Tower has served to teach them the value of money and the necessity for labor, and we believe that they are nearly all willing to work for a living. Though it would be greatly to their interest to remove to better lands where they could be instructed and practiced in the arts of civilized life, their condition where they are is not hopeless, and if the flow of white people to that country should continue, a necessity for the kind of service which they render will insure them a support, with the fish, game, and berries which abound in their country. We consider them in as good a condition as poor white people who have nothing but poor lands on which to make a living. They are gradually civilizing, and with a small amount of help from the Government, and better educational advantages, they would soon be civilized.

The Government has discharged its full duty in offering to place them in a better situation and making due allowances for the want of intelligent appreciation of its kindness, their present situation and failure to be in a better one is their own fault.

Having unanimously refused to accept the good offers of the Government, we left them and returned by rail to Duluth and took passage on the first steamer to Grand Portage. Agent Gregory gave us all the aid in his power, for which he is entitled to the thanks of the Commission.

GRAND PORTAGE, MINN.

These Indians number about 300, and have their habitations on the north shore of Lake Superior, very near the international boundary line.

We arrived at this point on the 24th day of May, 1887.

About one-half of the band live in and around Grand Marias, on Lake Superior, and the other half at Grand Portage. They had received due notice of our coming, and as we reached Grand Portage, where the steamer stopped for a short time, we gave notice that we had passed, and that we would hold the council on the next day at Grand Portage.

We learned that most of the Indians around Grand Marias were engaged in transporting and guiding persons who were prospecting for iron and timber in that vicinity.

On our arrival at Grand Portage a considerable number of Indians had gathered there to await our coming. We had them called together immediately after our arrival, and on the same day, in the school room.

The country is cold, bleak, and barren, and presents a most uninviting appearance. There is but one white man on the reservation, the postmaster. We did not see a wagon, a plow, a hoe, or an implement of any kind; neither did we see a cow or a domestic animal. We learned that one old woman had a few domestic fowls.

There was no evidence that a plow, a hoe, or a spade had ever been used on the ground; white men who had been all over the reservation or through it said that what we saw there was just like the other portion of it. We were informed that the Indians who lived on this part of the reservation are idle and thriftless, and do not know one day where the next day's meals are to be found. Not so with those who live around Grand Marais. From the appearance of the few we saw, and the statements of intelligent whites, we learned that they are industrious, thrifty, and economical, and that they make a support by honest labor. They all know how to labor, and those who are lazy and idle are so because they prefer that sort of life. Grand Marais is not on the reservation.

In substance, one council with these Indians was but a repetition of what was done at Bois Forte, except that believing a much greater necessity existed for the removal of these Indians than for those at Bois Forte, we, if possible, increased our efforts. At the close of the first day's proceedings the chiefs announced that they would meet in council at night and prepare an answer and meet us again in the following morning, which was agreed to.

At the meeting in the morning, before hearing the reply, we reiterated in the strongest manner we were able their destitute condition, the poverty of the reservation, the severity of the climate, the advantages they would derive by removal to White Earth, the liberal offers of assistance made by the Government, and its great desire to see them in a prosperous and happy condition. It was also clearly shown to them that, however anxious the Government might be to afford them help, nothing profitable could be done for them whilst they remained on that reservation.

Agricultural implements and stock could avail them nothing, as they had no land adapted either to farming or stock-raising. Strange as it may appear, these Indians

were all well dressed in citizens' clothes, wearing short hair, and to all appearances civilized. We inquired of persons acquainted with their habits as to this, and were informed that when they get money either for labor or by hunting they spend it all for clothing and none for provisions. We witnessed a transaction between two of them and a trader who lives near the reservation. The Indians had killed a bear and brought the skin to the trader to sell. He purchased it, giving them $6 in money for it. They then expended every cent of the money for clothes and ornaments, purchasing nothing whatever to eat. The trader told us that this was their universal custom, and that he had no idea that either of the two men had anything for themselves or their families to eat.

In addition we learned that in former times, when agricultural implements and other useful articles were distributed among them by the Government, they would sell them the very first opportunity presented. Certain it is that no valuable use can be made of such articles on this reservation.

The speaker who had been selected to respond to our proposition took from his pocket a manuscript written by himself in the Chippewa language, which he read to us intelligently, the same being interpreted. He reviewed at length the history of the Indians and their treaties with the whites and their good faith and friendship with the Government. He denied that the reservation was as poor and unproductive as it had been reported to be, and intimated that some enemy of his tribe must have intentionally misrepresented it. He admitted that the Government so far had complied with its treaty stipulations; and it may here be said that he was the very first Indian speaker who ever made an admission of this kind to the Commissioners. He said he thought his people could make a living where they are, even should the Government give them no aid in the future. He, however, earnestly insisted that all the things promised in case of removal should be given them and also allow them to remain on their present reservation. His language throughout was respectful in tone and he was dignified and firm in his bearing. His speech met with universal approval and applause on the part of the Indians.

It being apparent that no satisfactory agreement could be made, we adjourned the council and took the same steamer on which we came.

On the arrival of the steamer at Grand Marais, where it stopped a short time; a paper was handed us by a white man, H. Mayhew, which is addressed to the President of the United States, and reads as follows:

"We, the Indians living at Grand Marais, Minn., are a part of the Grand Portage Band of Chippewas, and are not willing to be removed from our reservation on Lake Superior to a country unknown to us. We have always been friendly to the whites, and not been any trouble to the Government, and we think it unfair that we should be taken from the home of our fathers.

"When the country was in trouble we sent some of our men to help in war, and we think we should be left on our land in peace and not be taken to a new country. Our band is small, and in a few years we will all be gone to the happy land, and it will be but a short time and you will have no more trouble with us, and we ask to be left on the land of our home and the home of our fathers."

The witnesses to the signatures are Jackson Phillip, Geo. B. Manter, H. Mayhew, G. N. Castleton, D. A. MacFarland, and J. F. Hull. It was signed by 58 Indians, some of whom from the names appear to be women. We file herewith the original paper in order to show the feeling of this portion of the band, they not having participated in the council.

This completed all the work assigned us, and we left immediately for Duluth and from thence proceeded to this city.

We were instructed not to delay on our route for the purpose of making a final report, but only to make short reports by telegram as the work progressed.

On our arrival in Washington we had to arrange and classify the papers, write out from notes full proceedings of the councils with the various tribes, and make a full and final report of our entire work from the date at which Commissioner H. W. Andrews joined the Commission.

We have endeavored to make the report in such a manner as to give our reasons for each article of the agreements and to give such information with regard to the condition of the Indians and their respective reservations as might be useful in future dealings with them.

If these agreements shall be ratified by Congress and be carried into effect in good faith it is confidently believed that the Indians will soon arrive at a position in which they may be self-supporting and cease to be a burden on the Government. That Indians can be taught to work and made to do it as cheerfully and willingly as other people has been demonstrated, and what has been done can be done again.

The Commissioners had their first meeting in Saint Paul, Minn., about the 1st of August, 1886.

They entered at once upon the discharge of the arduous, important, and delicate duties intrusted to them. From that time until the present they have been constantly engaged in traveling and counseling with various tribes of Indians with whom they were instructed to hold negotiations. They have visited in all thirty-one bands of Indians, residing in Minnesota, Dakota, Montana, and Idaho and Washington Territories. Most of these bands live at different places and widely separated one from another; many of them are wild and live a roaming life and are not on reservations. To reach them has required an amount of travel rarely accomplished considering the seasons and conditions of transportation. Much of the time they slept on the ground, sometimes without even the covering of a tent. They traveled perhaps as much as 7,000 miles by rail, several hundred miles in road wagons, near 400 miles by lakes and rivers, much of this in frail birch-bark canoes propelled by Indians, and 1,500 miles in open sleighs over vast plains of snow when the thermometer ranged from zero to 60 degrees below.

Of the thirty-one bands treated with they failed to make negotiations with but four bands, and one of these was found to be in such a good condition that the Commissioners did not press their propositions, and in one more it is questionable whether it was desirable that the propositions should have been accepted.

In most instances the consent of a large majority of the tribes and bands was voluntarily given after the widest and most intelligent discussions were had. In the cases where the majority was not obtained the full consent of the chiefs and head-men was given in open council, with the full knowledge and consent of the tribes, or a majority thereof, and in accordance with the practice of treaties with them.

By the terms of the various agreements the Indians have been justly dealt with, ample provision made for their support, education, civilization, and final self-support, and it is believed that upon the ratification of the several agreements negotiated, the Indian title or claim to between twenty-five and thirty million acres of land will have been extinguished either by direct cession or to be disposed of as in the respective agreements provided, all of which now lies idle and unproductive, and which contains millions of treasure in the form of timber and valuable and precious metals.

Right of way through various reservations has been obtained, by which wagon-roads and railroads can be constructed.

Lastly, the various bands and tribes have been made to rely on the sense of justice and kindly intentions which pervade the breasts of those who have the control and management of Indian affairs, and the opinion is confidently entertained by your Commissioners that at every point which they have visited the feeling toward the Government among the Indians is one of trust, confidence, and respect.

The Commissioners have at all times faithfully endeavored to follow the instructions given them, and in all things to carry out the expressed humane policy of the Government toward the Indians.

In dealing with so many bands and tribes of Indians differently situated, in different stages of civilization, some wild and barbarous, some half civilized, and a few with as high degree of civilization as is likely to be reached by Government aid, it was to be expected that some mistakes would be made; but the Commissioners are conscious of no omission on their part of an honest endeavor to do strict justice to the Indians, having due regard for the honor and dignity of the Government and the rights of the white people.

As was promised us in our instructions, the Department has at all times and in all things given us its earnest and efficient support.

Before leaving his home in Minnesota, Commissioner Daniels authorized his name to be signed to the final report by the other Commissioners.

All of which is respectfully submitted.

JNO. V. WRIGHT,
HENRY W. ANDREWS,
JARED W. DANIELS,
Commissioners.

To the President of the United States:

We, the Indians living at Grand Mariaias, Minn., are a part of the Grand Portage band of Chippewas, and are not willing to be removed from our reservation on Lake Superior to a country unknown to us. We have always been friendly to the white man, and not been of any trouble to the Government, and think it unfair that we should be taken from the home of our fathers. When the country was in trouble we sent some of our men to help in the war, and we think we should be left on our land in peace, and not be taken to a new country. Our band is small, and in a few years we will all be gone to the happy land, and it will be but a short time and you will have no more

trouble with us, and we ask to be left in the land of our home and the home of our fathers.

Laence Carriboo, George Arrawat, Frank Katoss, Dominique Peterson, Kadin Shingah, James Morrison, Paul Morrison, Peter Katoss, Therese One Great, Jack Shingat, Charles Onegrett, Elizabeth Onegrett (her x mark), Kadin Anequett (her x mark), Therese Anequett (her x mark), Elexan Anequett (his x mark), Martin Anequett, Demage Catans (his x mark), Mary Catans (her x mark), Manstarr Callan (his x mark), Waubna Shewe (his x mark), Masha Aticwe (his x mark), Munsoqua Shingat (her x mark), Shirguibans (his x mark), Buck, Blue Sky, Jim Day (her x mark), Awata Gejagake (her x mark), Nejata (his x mark), Tatoga, Maryann Coller (her x mark), Nelson Sweet, Joe Sweet, Cecill Sweet, Louise Sweet, Margret Souma, Peter Mamashkauash (his x mark), Susan Mamashkauash (her x mark), Eliza Mamashxauast (her x mark), Mary Bears Grease, Ve Be Twa Kun, Swampy Ocquence, Ta Bua Ta Gus, Rennie Shingat, Rosa Shingat, Jim Garfield Shingat, Antoine Fillison, John Morrison, Pulais Morrison, Jossett Morrison, Cecill Catass, Mary Morrison, Peter Morrison, Sabatiss Morrison, Alex. Morrison, Martil Auequet.

Witness: Jackson Phillip, George B. Manter, H. Mayhew, G. W. Castleton, D. A. McFarland, J. F. Hull.

Agreement with Spokane Indians.

Articles of agreement made and concluded at Spokane Falls, in the Territory of Washington, the 18th day of March, eighteen hundred and eighty-seven, by and between John V. Wright, Jarred W. Daniels, and Henry W. Andrews, Commissioners duly appointed and authorized, on the part of the United States, and the undersigned, Chiefs, Head-man and other Indians of the Upper and Middle bands of Spokane Indians, they being authorized to act for said bands by them.

ARTICLE 1.

The aforesaid bands of Spokane Indians hereby cede to the United States all right, title, and claim which they now have, or ever had, to any and all lands lying outside of the Indian reservations in Washington and Idaho Territories, and they hereby agree to remove to and settle upon the Cœur d'Alene Reservation in the Territory of Idaho.

ARTICLE 2.

It is further agreed by the parties hereto, that said Indians will be permitted to select their farms and homes on a tract of land to be laid off and surveyed and the boundaries marked in a plain and substantial manner under the direction of the Secretary of the Interior, on said Cœur d'Alene Reservation, provided that in laying out said tract of land, the lands taken and occupied by the Indians now on said Cœur d'Alene Reservation shall not be interfered with; and it is further agreed that said Spokane Indians will take lands in severalty under and according to an act of Congress entitled "An act to provide for the allotments of land in severalty to Indians on the various reservations and to extend the protection of the laws of the United States and the Territories over the Indians, and for other purposes," which act was passed and approved during the second Session of the Forty-ninth Congress, and is known as the Allotment act.

ARTICLE 3.

It is further agreed that the homes and lands selected, as provided for in the foregoing article, are to be and remain the permanent homes of the Indians, parties hereto, and their children forever.

ARTICLE 4.

It is further agreed that in case any Indian or Indians, parties hereto, have settled upon any of the unoccupied lands of the United States outside of said reservation, and have made improvements thereon with the intention of perfecting title to the same under the homestead, pre-emption, or other laws of the United States, and residing on the same at the date of the signing of this agreement, he or they shall not be deprived of any right acquired by said settlement, improvement, or occupancy by reason of sign-

ing this agreement or removal to said Cœur d'Alene Reservation, and said tract or tracts of land shall continue to be held by said parties, and the same patented to them by the United States.

ARTICLE 5.

In consideration of the foregoing cessions and agreements the United States agrees to expend for the benefit of said Indians, parties hereto, the sum of ninety-five thousand dollars, as follows, to wit: For the first year, thirty thousand dollars; for the second year, twenty thousand dollars, and for each succeeding year thereafter for eight (8) years, five thousand dollars, said money to be expended under the direction of the Secretary of the Interior in the removal of the said Indians to the Cœur d'Alene Reservation, in erecting suitable houses, in assisting them in breaking lands, in furnishing them with cattle, seeds, and agricultural implements, saw and grist mills, thrashing-machines, mowers, clothing; provisions; in taking care of the old, sick, and infirm; in affording educational facilities, and in any other manner tending to their civilization and self-support: *Provided*, That in case any of the money herein provided for is not used or expended in any year for which the same is appropriated, said money shall be deposited in the Treasury of the United States to the credit of the Indians, parties hereto, to be used for their benefit under the direction of the Secretary of the Interior.

ARTICLE 6.

It is further agreed that in addition to the foregoing provisions the United States shall employ and furnish a blacksmith and a carpenter to do necessary work and to instruct the Indians, parties hereto, in those trades.

ARTICLE 7.

It is further agreed that in the employment of carpenters, blacksmiths, teamsters, farmers, or laborers, preference shall in all cases be given to Indians, parties hereto, who are qualified to perform the work or labor.

ARTICLE 8.

In order to encourage said Indians in taking allotments of land, and in preparing the same for cultivation, it is agreed that when all of said Indians shall have selected and shall have broken five acres or more on each farm, the sum of $5,000 in money shall be given them out of the funds herein provided and distributed pro rata among them, provided that in the discretion of the Secretary of the Interior and the Commissioner of Indian Affairs, a pro rata payment out of said fund may be made to any ten families who shall have complied with the provisions of the article as to breaking lands.

ARTICLE 9.

In consideration of the ages of Chiefs Louis, Spokane Garry, Paul Schulhault, Tarkan, and Enoch, the United States agrees, in addititions to the other benefits herein provided, to pay to each of them for ten years the sum of $100 per annum.

ARTICLE 10.

In case any Indian or Indians, parties hereto, shall prefer and elect to remove either to the Colville or Jocko Reservations, instead of the Cœur d'Alene Reservation, and shall give reasonable notice of the same, after the ratification of this agreement by Congress, he or they shall be permitted to do so, and shall receive a pro rata share of all the benefits provided for in this agreement.

ARTICLE 11.

This agreement shall not be binding on either party until the same is ratified by Congress.

In testimony whereof the said John V. Wright, Jarred W. Daniels, and Henry W. Andrews, on the part of the United States, and the chiefs, head-man, and other

Indians, parties hereto, have hereunto set their hands and affixed their seals this 15th day of March, A. D. 1887.

JOHN V. WRIGHT. [SEAL.]
JARRED W. DANIELS. [SEAL.]
HARRY W. ANDREWS. [SEAL.]

Signed with an x mark and seal:

Elijah; Curly Jim; Eneas; La-wap-a-louse; Frazy; Chief Joseph Skulhault; Chief Paul; Sale Spiley; Whisto Lo Jim; Paul Thomas; Charlie Louis; Buckskin Jim; Packing-his-hair; Qenant la com i con; John La Mar; Qiay quis to; Chief "Antarcham;" Chief "Spokane Garry;" William Jackson; Quill Tan; Broken Tooth; John Stevens; Simon; Charley; Antoine; T. M. Williams; John Solomon; Old Solomon; Sco Cow; Nuishels Smeya; Obed Jacobs; Thomas S. Garry; Solomon Scott; Joseph J. Wilson; Paul A. Garry; Levi; Chimmilichan; Chikineze; George; Ziomkona; Joshua; Isaac; John Wilson; "See Mok Mosquetquat;" "The Mountain Turkey;" Billy; Lot; Elias; Stephen; Chilkenishin; Schictish; Chief Enoch; Spokane George; Skulskullan; Shilchitemtoo; Chief Louis Welsholeg; Kampan Charley; Whitsotah; Peiresish; Kylminah; Louis; Philip; Antoine; Old Philip; Peter; Elick; Chetleskaimik; Stwoichin; Kulzkoo; John; Silimihan; Skamtaikn; Light of the Belly; Antoine; Quennemoso; Old John; Sakkon; Pascal; Tanuayakn; Zillon; (Augustus) Custah; Chestolo; Selotachan; Che-Squei-tah; Peter; Saltochasalchie; Eliquinch; Oltzschomak (Luke); Shiouitchan.

Witnesses:
FRED R. MARVINE.
SIDNEY D. WATERS.

I, Robert Felt, United States interpreter for the Colville Indian Agency, Wash., do hereby certify on honor that the foregoing agreement was carefully read in open council, and by me correctly interpreted, and that the contents thereof were fully explained to and fully understood by said Indians before the signing and sealing of the same.

his
ROBERT + FELT.
mark.

Dated Spokane Falls, Wash., March 18, 1887.
Witness:
SIDNEY D. WATERS.

The undersigned, members of the within-named Spokane tribe of Indians, not being present at the signing and concluding of this agreement at Spokane Falls, Wash., having had the same fully interpreted to us, do, this 27th day of April, 1887, fully agree to its provisions, and affix our names and seals at St. Ignatius Mission, in the Territory of Montana.

Signed with an x mark and seal:
Batiste Peon, Pierre, Michael, Joseph, Zavid, Edmund, Wm. King, François.
Witness:
THOMAS E. ADAMS.

I, Michael Revais, United States interpreter for the Flathead Agency, Mont., do hereby certify on honor that the foregoing agreement was carefully read in open council and by me correctly interpreted, and that the contents thereof were fully explained to and fully understood by said Indians before signing and sealing.

His
MICHAEL + REVAIS.
mark.

Dated Flathead Agency, Mont., April 28, 1887.
Witnesses:
THOMAS E. ADAMS.
HENRY A. LAMBERT.

Agreement with Cœur d'Alene.

This agreement made pursuant to an item in the act of Congress entitled "An act making appropriations for the current and contingent expenses of the Indian Department and for fulfilling treaty stipulations with various Indian tribes for the year ending June 30, 1887, and for other purposes," approved May 15, 1886, by John V. Wright, Jarred

W. Daniels, and Henry W. Andrews, duly appointed Commissioners on the part of the United States, and the Cœur d'Alene tribe of Indians, now residing on the Cœur d'Alene Reservation, in the Territory of Idaho, by their chiefs, head-men, and other male adults, whose names are hereunto subscribed, they being duly authorized to act in the premises, witnesseth:

ARTICLE 1.

Whereas said Cœur d'Alene Indians were formerly possessed of a large and valuable tract of land lying in the Territories of Washington, Idaho, and Montana, and whereas said Indians have never ceded the same to the United States, but the same, with the exception of the present Cœur d'Alene Reservation, is held by the United States and settlers and owners deriving title from the United States, and whereas said Indians have received no compensation for said land from the United States: Therefore,

ARTICLE 2.

For the consideration hereinafter stated the said Cœur d'Alene Indians hereby cede, grant, relinquish, and quitclaim to the United States all right, title, and claim which they now have, or ever had, to all lands in said Territories and elsewhere, except the portion of land within the boundaries of their present reservation in the Territory of Idaho, known as the Cœur d'Alene Reservation.

ARTICLE 3.

The said Cœur d'Alene Indians agree and consent that the Upper and Middle bands of Spokane Indians residing in and around Spokane Falls, in the Territory of Washington, may be removed to the Cœur d'Alene Reservation and settled thereon in permanent homes on the terms and conditions contained in an agreement made and entered into by and between John V. Wright, Jarred W. Daniels, and Henry W. Andrews, Commissioners on the part of the United States and said Spokane Indians, concluded on the 15th day of March, 1887, at the Spokane Falls, in the Territory of Washington.

ARTICLE 4.

And it is further agreed that the tribe or band of Indians known as Calespels, now residing in the Calespels Valley, Washington Territory, and any other band of non-reservation Indians now belonging to the Colville Indian Agency, may be removed to the Cœur d'Alene Reservation by the United States, on such terms as may be mutually agreed on by the United States and any such tribes or bands.

ARTICLE 5.

In consideration of the foregoing cession and agreements, it is agreed that the Cœur d'Alene Reservation shall be held forever as Indian land and as homes for the Cœur d'Alene Indians, now residing on said reservation, and the Spokane or other Indians who may be removed to said reservation under this agreement, and their posterity; and no part of said reservation shall ever be sold, occupied, open to white settlement, or otherwise disposed of without the consent of the Indians residing on said reservation.

ARTICLE 6.

And it is further agreed that the United States will expend for the benefit of said Cœur d'Alene Indians the sum of one hundred and fifty thousand dollars, to be expended under the direction of the Secretary of the Interior, as follows: For the first year, thirty thousand dollars, and for each succeeding year for fifteen years, eight thousand dollars. As soon as possible after the ratification of this agreement by Congress, there shall be erected on said reservation a saw and grist mill, to be operated by steam, and an engineer and miller employed, the expenses of building said mill and paying the engineer and miller to be paid out of the funds herein provided. The remaining portion of said thirty thousand dollars, if any, and the other annual payments shall be expended in the purchase of such useful and necessary articles as shall best promote the progress, comfort, improvement, education, and civilization of said Cœur d'Alene Indians, parties hereto.

ARTICLE 7.

It is further agreed that if it shall appear to the satisfaction of the Secretary of the Interior that in any year in which payments are to be made as herein provided said

Cœur d'Alene Indians are supplied with such useful and necessary articles and do not need the same, and that they will judiciously use the money, then said payment shall be made to them in cash.

ARTICLE 8.

It is further agreed that any money which shall not be used in the purchase of such necessary articles or paid over, as provided in article 7, shall be placed in the Treasury of the United States to the credit of the said Cœur d'Alene Indians, parties hereto, and expended for their benefit, or paid over to them, as provided in the foregoing articles.

ARTICLE 9.

It is further agreed that in the purchase for distribution of said articles for the benefit of said Indians the wishes of said Indians shall be consulted as to what useful articles they may need, or whether they need any at all, and their wishes shall govern as far as is just and proper.

ARTICLE 10.

It is further agreed that in the employment of engineers, millers, mechanics, and laborers of every kind, preference shall be given in all cases to Indians, parties hereto, qualified to perform the work and labor, and it shall be the duty of all millers, engineers, and mechanics to teach all Indians placed under their charge their trades and vocations.

ARTICLE 11.

It is further agreed that in addition to the amount heretofore provided for the benefit of said Cœur d'Alene Indians the United States, at its own expense, will furnish and employ for the benefit of said Indians on said reservation a competent physician, medicines, a blacksmith, and carpenter.

ARTICLE 12.

In order to protect the morals and property of the Indians, parties hereto, no female of the Cœur d'Alene tribe shall be allowed to marry any white man unless, before said marriage is solemnized, said white man shall give such evidence of his character for morality and industry as shall satisfy the agent in charge, the minister in charge, and the chief of the tribe that he is a fit person to reside among the Indians; and it is further agreed that Stephen E. Liberty, Joseph Peavy, Patrick Nixon, and Julien Boutellier, white men who have married Indian women and with their families reside on the Cœur d'Alene Reservation, are permitted to remain thereon, they being subject, however, to all laws, rules, and regulations of the Commissioner of Indian Affairs applicable to Indian reservations.

ARTICLE 13.

It is further agreed and understood that in consideration of the amount expended in buildings and other improvements on said Cœur d'Alene Reservation for religious and educational purposes by the De Smet Mission, and valuable services in the education and moral training of children on said reservation, and in consideration that the Indians, parties hereto, have donated for said purposes one section of land on which is situated the boys' school, one section on which is situated the girls' school, and one section of timbered land for the use of the schools, that said De Smet Mission and its successors may continue to hold and use said three sections of land and the buildings and improvements thereon so long as the same shall be used by said De Smet Mission and its successors for religious and educational purposes.

ARTICLE 14.

This agreement shall not be binding on either party until ratified by Congress.

In testimony whereof the said John V. Wright, Jarred W. Daniels, and Henry W. Andrews, on the part of the United States, and the chiefs, headmen, and other adult Indians, on the part of the Indians, parties hereto, have hereunto set their hands and affixed their seals.

Anthony Seme, Charles Augustus, Leo Achetops, Etienne Stakan
Kuimchilsile, Thomas Guissunge, Cornelius Quiquilel, Louis Schun
Adrian Milmilagan, Alexander Chilcheko, Adrian Schizikue, Pierr
Schezi, Semo Chimineme, Joseph Karlimkue, Louis Michael We
Michel, Pierre Joseph Schaike, Benoit Schulilize, Louis Sebastian Ku
Adrian Kuzalchau, Joseph Nkonoqua, Isadore Npapskue, Charles
Ænead Basil, Andrew Ologazu, Moses Mogzela, Peirre Paul Koip
Schilzispo, Louis Malkapsie, Daniel Quinemose, Les Nzakakalipeag
Paul Mguiakan, Louis Lolo, Francois Nsispikua Nkaisis, Francois,
Felicien, Pierre Basil Lauwasket, Leo Tempilime, Louis Nimuse, L
tone, Stanislaus, Nickodemus Kruto, Louis Sepas, Payuse Willimsen
Scisqouachan, Phillip Pokatchan, Joseph, Peter Paul, Stephen.

BENJAMIN S. MOOR

Witnesses:
SYDNEY D. WATERS.
JOHN P. SWENEY.

I, Robert Felt, U. S. Indian interpreter for the Colville Indian Agency, W
hereby certify on honor that the foregoing agreement was carefully read and
plained to the Indians in open council and by me correctly interpreted, and that
tents thereof was fully understood by said Indians before the signing and sealin
same.

his
ROBERT +
mark

Witness:
A. C. KING.

Dated DE SMET MISSION, CŒUR D'ALENE RESERVATION,
IDAHO TERR'Y, *March* 26, 1887.

Articles of agreement

Made and concluded at Sand Point, in the Territory of Idaho, on this the twe
day of April, in the year of our Lord one thousand eight hundred and eighty-se

set of double harness, stoves [for each house]; plows and all other necessary agricultural implements for each family; and the United States does further agree to make provision for taking care of the old, sick, and infirm members of said tribe, and to furnish said tribe of Indians with food, clothing and medicine until such time as they can become self-supporting, but not to exceed five years. And the United States further agrees to furnish said Indians with necessary seeds for the first year after going upon said reservation; and the United States further agrees, in order to encourage said Indians in the habits of industry, to furnish, from time to time, such other useful and necessary articles as will tend to promote their advancement and civilization, in the discretion of the Secretary of the Interior. And the United States further agrees to remove said Indians from their present homes to the said Jocko Reservation.

ARTICLE II.

And the United States further agrees, that in the employment of persons to perform labor of every kind, such as building houses, clearing, breaking and fencing land, making rails, hauling supplies and other things, preference in all cases shall be given to the said Indians who are qualified to perform such labor, and they shall be paid a just and reasonable compensation for the same.

ARTICLE III.

In consideration of the extreme age and the valuable services he is expected to perform, the United States agrees to pay Chief Victor, head chief of said tribe, the sum of $100 per annum during his life, the first payment to be made as soon as possible after his removal to the said Jocko Reservation.

ARTICLE IV.

The United States further agrees, that any of said Indians who have made settlement and improvements on the lands where they now reside may sell and dispose of any right, title, or interest which they have to the same, and receive the pay therefor.

ARTICLE V.

The United States further agrees, that one quarter-section of land on said Jocko Reservation may be selected and set apart for educational and religious purposes, and that suitable buildings may be erected thereon, which buildings and land may be used for said purposes, or for either.

ARTICLE VI.

In consideration of the foregoing agreements, the undersigned Pend d'Oreille or Calispel Indians hereby agree to remove to and settle upon lands within the Jocko Reservation, in Montana Territory, hereby relinquishing all rights, title, or claim which they now have, or ever had, to all other lands in the Territories of Idaho and Washington, or elsewhere, to the United States: *Provided*, That if any Indian or Indians, shall prefer to remove to the Colville Reservation, in Washington Territory, or Cœur d'Alene Reservation, in the Territory of Idaho, he or they shall be permitted to do so without forfeiting his pro rata share of the benefits herein provided.

ARTICLE VII.

This agreement shall not be binding upon the parties hereto until ratified by Congress.

In testimony whereof the said John V. Wright, Jarred W. Daniels, and Henry W. Andrews on the part of the United States, and the chiefs, head-men, and other Indians on the part of the Indians, parties hereto, have hereunto set their hands and affixed their seals this twenty-first day of April, A. D. one thousand eight hundred and eighty-seven.

JNO. V. WRIGHT. [SEAL.]
JARRED W. DANIELS. [SEAL.]
HENRY W. ANDREWS. [SEAL.]

Chief, SITTING GRIZZLY BEAR his + mark. MICHAEL. [SEAL.]

Signs for himself and his band of Pend d'Oreilles, numbering over twenty-five men.

PIERRE. his + mark. [SEAL.]

The undersigned members of the within-named tribe of Pend d'Oreille Indians not present at the signing and concluding of this agreement at Sand Point, in the Ter of Idaho, having had the same fully interpreted to us, do this twenty-seventh d April, eighteen hundred and eighty-seven, fully agree to its provisions and affi: names and seals at St. Ignatius Mission, in the Territory of Idaho.

his
BIG + HEAD. [SEA
mark.
his
JOSEPH. + [SEA
mark.
his
ANTOINE. + [SE
mark.

Witness:
THOMAS E. ADAMS.

I, Michael Revais, United States interpreter for the Flathead Indian Agency, I do hereby certify on honor that the foregoing agreement was carefully read and correctly interpreted, and that the contents thereof were fully explained to and ful derstood by said Indians before the signing and sealing of the same.

his
MICHAEL + REV
mark.

Witnesses:
THOMAS E. ADAMS.
HENRY A. LAMBERT.

Agreement with Flatheads, Pend d'Oreilles, and Kootenais.

This agreement, made and concluded at St. Ignatius Mission, Jocko Reservation head Agency, in the Territory of Montana, on this 27th day of April, in the y our Lord one thousand eight hundred and eighty-seven, by and between Jno. V. W Jarred W. Daniels, and Henry W. Andrews, duly appointed commissioners on th of the United States, and the chiefs, head-men, and other adult Indians of the c erated bands of Flathead Pend d'Oreilles, and Kootenay Indians, witnesseth

That whereas it is the policy of the Government of the United States to remove settle upon Indian reservations scattered bands of non-reservation Indians, so as to them under the care and protection of the Government of the United States, and w a part of the Upper and Middle bands of Spokane Indians have expressed their

dians only, the undersigned, chiefs, head-men, and other adult Indians belonging to the confederated bands of the Flathead, Pend d'Oreilles, and Kootenay Indians now residing on the Jocko Indian Reservation, in the Territory of Montana, do hereby agree and consent that the said Spokane and Pend d'Oreille Indians may be removed to and settled upon the lands of said Jocko Reservation in permanent homes on the terms and conditions contained respectively in the agreement made with the Spokanes at Spokane Falls, in the Territory of Washington, and with said Pend d'Oreilles at Sand Point, in the Territory of Idaho, and we do further agree and consent that the United States may remove to and settle upon the said Jocko Reservation any other non-reservation tribes or bands of Indians who desire and agree to said removal, on such terms and conditions as may be hereafter agreed on between the United States and any of said Indians.

ARTICLE 2.

In consideration of the large amount of money expended by St. Ignatius Mission in the erection of a church, school-houses, mills, barns, shops, and other useful buildings, and in the opening and fencing of farms and gardens, and in the consideration of the religious and educational facilities afforded thereby to our children, and our anxious desire that our posterity in all time to come shall continue to have such advantages and facilities, the undersigned Indians agree that the United States may have surveyed and set apart a tract or parcel of land not exceeding one section for the boys' school, under the charge of the Society of Jesus, and one section for the girls' school, under the charge of the Sisters of Providence, on which are situated said buildings and improvements, which land and improvements may be occupied and held by said St. Ignatius Mission for educational and religious purposes, as long as they are used for said purposes and no longer. Provided that nothing herein contained shall interfere with the rights of Indians living upon said tracts of land.

ARTICLE 3.

In consideration of the above agreements on the part of the Indians and the necessity therefor, the United States agree to erect on said reservation, a saw and grist mill and furnish a miller for the same at such place on said reservation, under the direction of the Commissioner of Indian Affairs, and the United States further agrees to furnish a competent blacksmith, and pay for the services of the same, to be located at or near the said saw and grist mill, and to furnish suitable tools for his use.

This agreement not to be binding upon the parties hereto, until the same shall be ratified by Congress.

In testimony thereof, the said John V. Wright, Jarred W. Daniels, and Henry W. Andrews, on the part of the United States, and the chiefs, head-men and other Indians, on the part of the said confederated tribes of Indians, parties hereto, have hereunto set their hands and affixed their seals this twenty-seventh day of April, A. D. eighteen hundred and eighty-seven.

Signed with an x mark and seal:

Jno. V. Wright, Jarred W. Daniels, Henry W. Andrews, Michael [signs for fifty-five (55) men], Eneas, chief of the Kootenais, Arlee, Atol, Partee, Joseph, Louison, Partee, Eusta, Vital Revais, Joseph, Paul, Alexander Matte, Alexander Purrier, James Lewis, Joseph, Octave Revais, Antelli, Francoise, Abelos, Robert Irvin. Peter Ogden, Eneas Pierre, Louison, Isaac, Paul, Eneas Francoes, Isaac, Francois Lauctat, Francois, Pierre, Joe Gardipee, Paul Gardipee, Alexander Murrijean, Leon Altice, Big Sam, Isadore Ladirouth, Eneas, Joseph Paine, Louis Valle, Gregory Big Head, Michel, Celo, Louis, Matta, Adolph, Peirre, Pizi, Lomas, Susep, Maxime, Leon, Bosep, Isaac, Ponel, Joseph, Custata, Charley Joo, Antoine, Eneas, Pierre Paul, Pierre, Bosep, Isaac, Joseph, Antoine Maise, Stanislaus Ausley, Charles Sinchelap, Esknilkeilszn, Blase, Joseph Plant, Joseph, Eusta, Pierre Paul, Pamuell, John, Louis, Penvel, Michael Revais, Partee, Penoel, Charles, Charles Allard, Michelle, Artemus, Pamuell, Peirre, Paul Andre, Pierre, Nichola, Lormae, Felix, Partee, Charles, Lola, Lenace, Big Pierre, Don Donald, A. P. McDonald, Penoit, Batiste Matte, Louis Matte, Joe De Shaw, Henry Jebean, Joseph Paine, jr., Edmund Destan, Sam Belman, William Finley, Louis Saxa, Louis, Antoine, Pierre, Batiste Peon, Antoine, Charlowane, Michael, Paul Paon, Isaac.

Witnesses:

LEOPOLD VAN GORP.
THOMAS E. ADAMS.

I, Michael Revais, United States interpreter for the Flathead Indian Agency, Mont., do hereby certify, on honor, that the foregoing agreement was carefully read in open council, and by me correctly interpreted, and that the contents thereof were fully explained to and fully understood by said Indians before the signing and sealing of the same.

his
MICHAEL × REVAIS.
mark.

Dated, ST. IGNATIUS MISSION, FLATHEAD INDIAN AGENCY, *April* 27, 1887.

Witnesses:
THOMAS E. ADAMS,
HENRY A. LAMBERT.

NOTE BY INDIAN OFFICE: The minutes of the councils with the Upper and Middle bands of Spokane Indians are so voluminous as to preclude the possibility of preparing copies in time to submit the same with this report. They are filed in this office with the original report of the Commission.

The agreement with the White Earth and Pillager and Lake Winnibigoshish Chippewas, which was presented to the Bois Forte and Grand Portage Chippewas by the Commission, is also omitted. Said agreement is printed in Senate Ex. Doc., No. 115, Forty-Ninth Congress, second session.

COUNCIL WITH CŒUR D'ALENES.

WEDNESDAY, *March* 23, 1887.

The council met and opened with prayer by Reverend Father Carnano. Present, Commissioners Wright, Daniels, and Andrews, the chiefs and bands of the Cœur d'Alenes, and the interpreter. Judge Wright said:

"My friends, we have traveled a great distance in order to meet you. We thank you most sincerely for the very kind reception you have given us, and for your words of friendly greeting. You are the descendants and representatives of a noble tribe of Indians. You have given up the pursuit of war and of the chase and are devoting all your energies to the arts of peace; you are striving manfully to take care of yourselves, your wives, and your children. We have visited your schools and have seen how well your children are being educated. All this we need not tell you. We are well pleased, and particularly when we know that you feel so deep an interest in these matters. It will inspire your friends to renewed efforts. It will strengthen those who are striving to advance you and place you firmly on the road to civilization and independence. Those who sent us here will be glad to hear all this. Your condition and the character of your reservation we had heard of before our coming, but it is better than had been told us. You are known to be a people who are rising in intelligence and in all the pursuits of peace; that you have been friendly toward your white neighbors, and that you have given them assistance in times of danger and trouble, is known and appreciated. It is also known that you claim to have once possessed a large body of land, that much of it has been settled by white people, that you had never ceded it away, and that you have received nothing for it. You have a good reservation which you wish to preserve for yourselves and your children. The Great Father desires that this shall be done. You have good farms, fences, and houses, agricultural implements and stock, and we learn that you are working men, that you cultivate your farms and make good crops. We come with kind words from the Great Father. We do not come to force you to do anything. We come to ask your consent. We bring no soldiers, but only words of kindness and praise. We will speak plainly so that you can understand us, and we wish you to agree to nothing until you understand it, and not then unless your minds and hearts are willing.

"Your brethren, the Spokanes, for years have been living about the falls. The white people have gone there and settled all over their country. These Indians are very poor and unhappy. They have no lands and no homes. The Great Father has pity on them, and he wishes to place them on a better country. He wishes also that you will have pity for the Spokanes.

"In 1885 the Government sent Governor Stevens and some other Commissioners to visit and treat with the Indians in this part of the country, and, among others, he was instructed to visit the Spokanes and the Cœur d'Alenes. Governor Stevens made an honest endeavor to see them and you, and to buy your lands, but he was prevented from doing so by an Indian war which broke out about that time. I could explain to you why no other commission was sent. It is enough to say, that it was not because the Gov-

ernment cares nothing for the Spokanes or you, for it is true that the condition of the Spokanes has long been a matter of much concern. We have just left the Spokanes. We were with them in council for many days. They were slow to understand, but after a while we succeeded in making an agreement with them by which we hope to remedy their wrongs and bring them to a bettter condition. In order to do this we need the helping hand of you, the Cœur d'Alenes, and we come to ask that help from you. The President desires that they shall have houses, farms, agricultural implements, and help in other ways as a recompense for their lost country. He wishes that they all may be removed to this reservation by your consent. It is believed that by bringing them here and locating them on farms on this reservation they will soon be in the good condition we find you. If they stay where they are it is feared that they will be ruined. Some of the whites among them are friendly to them, but some give them whisky and cards, and they are leading a bad life, and have much trouble in getting along. We think that it will not only be an act of kindness on your part to allow these poor people to come and live with you, but we also believe it will be the best for you. It is known to you that the whites much desire to get your reservation, or some of it. The whites are increasing in numbers rapidly and they are clamorous for more land. It is not right that large bodies of good land should lie idle and uncultivated. It must be worked either by white people or by Indians. If your reservation was full of Indians the whites would not want it, or ask for it. Already we have been asked to open this reservation to white settlement. Long petitions came to us while we were at Spokane Falls asking that this be done. We told them no, we have no power to do that; we came to put other Indians there who have no homes. Now you can see that we come as your friends, and we wish you to think of these things and speak freely to us. We wish to take as little of your time as possible, as you know you are farmers, and that you are needed at home. The time we will leave to your judgment. We wish also to hear from you on the subject of your lands about which you wrote to the President in your petition. We wish also to hear from you as to your wants and necessities. We wish every question fully discussed and well understood. We see you are sensible men and disposed to do right, and we think you will have but little trouble in coming to a just conclusion.

"This business is not entirely new to us. We have visited many Indians in other places and have made agreements with them. Each of us has had experience. My friend Major Andrews, has been in the Indian office, and Dr. Daniel has been much among Indians. We are all pleased at what we have seen among you. We have seen that Indian children can learn what white children can, and that you are as good farmers as white men under the same circumstances. We are anxious to do that which is right for you. We wish to see you have justice and to improve your condition. As for myself, I can say with truth that my anxiety to succeed in our efforts to improve the condition of the Indians is greater than I ever felt in any public employment of my life."

Dr. DANIELS. My friends, the judge has said nearly all I can say. I have been a long time among the Indians. At the same time, when Governor Stevens came to this country the judge was a member of the Great Council at Washington, and I was appointed to go among the Indians. When first I went among the Indians they had as food the wild meat of the buffalo; now I see you on good farms and in your happy homes. I have seen a great many Indians, but I did not expect to see them ahead of the whites as I see them here.

You have the finest schools, the best community that I have seen among Indians, and we are well pleased. We can talk to you as we can to the whites and do business with you as with them. We are all very glad to see you."

Chief SELTICE. All right, I will assure you; you have come from afar, and our hearts are all glad to-day. We have wanted to see you; we have not doubted our Great Father, but always believed that, though he was a great ways off beyond the mountains, yet he would see us and remember us, his children; my heart is big to-day, and my people are pleased at your coming, and I am glad also. Tell us what you desire us to do, and we will do it gladly, willingly. We will try to do what is right; we are as children; yet the Great Father has us under his protection, and you promise to help us. We want your advice; we want your counsel and help. For this we thank you. I have little to say to-day and do not wish to make any mistakes. We wish to consider. You have spoken to us about the Spokanes. We are very sorry for them, and we will do all in our power to better their condition. We have heard that many of them wish to come on this reservation; our people will be well pleased if they will all come. I learn that they have two ideas; they are not as one, but I believe we can make them as one, so that they will all come here; we will try to gain their affections; we believe that they will be as one among us. You say you are well pleased at what we have done in the past; we are glad. We try to do that which will please our Great Father. You have seen our schools and you speak words of kindness and encouragement. We wish these schools to remain always with us. What we have promised the fathers and sisters before, we wish confirmed.

These fathers have labored faithfully among us in teaching our children; we wish what we have promised them confirmed by the Great Council, so that we will feel secure in our schools. We think you can help us in that which we ask for; you can do what we want. We will talk more of this.

Judge WRIGHT. Do you wish to talk to us about your lands mentioned in your petition of two years ago?

SELTICE. We wish you to talk first and then we will answer you.

Judge WRIGHT. The paper which I hold in my hand [Senate document] sets out fully your claim; in that petition you say your boundary was as follows: Commencing at Steptoo Butte, runs northwest to Antoine Plants on the Spokane River, thence to the Pend d'Oreille Lake, thence to the summit of the Cœur d'Alene Mountain, thence south to the most southern thereof whence flow the waters of the Palouse River, thence west along the southern rim of the water-shed of the Palouse River to the beginning.

We wish to do right about the claim; that was one purpose for which we were sent to you. On yesterday I omitted to say anything about your promise to the fathers concerning the schools. We will consider this and do all we can to satisfy your desire. You do well in appreciating your schools. If the advantages which your children enjoy had been given you it is plain that it would have aided you very much. When your children grow up to be men and women the advantages derived from these schools will be seen and felt. It will enable them to compete with the white people in the affairs of life. We will consider what is best to be done.

SELTICE. We are pleased at what you say; we know it to be good. Our chiefs have not talked together, but what we said in our petition two years ago we wish fixed; we wish that which we promised carried into effect with the fathers and sisters, for with us they will be always. This is the great desire of our hearts.

VINCENT (Old Chief). A long time ago I was not such as you see me now; I am old. I am glad of what you are doing. It is good. I think there are two things. One is from the father and one is from you. These two things we have gained. The fathers tell us we have souls, and that we can go to heaven. This is one thing. I am talking to you only now, but many have my heart. The Spirit has care of my soul, and you of my body. I know that through you our country is saved, and from you we have found things to eat, because you have taught us how to get our food. The Coeur d'Alenes are getting along well, and you have brought us to this; you have saved our land where we are, and this we owe to the Government.

SELTICE. The land outside this reservation has been taken up by the whites, and we had forgotten it until two years ago, when we remembered it; and then we sent our petition to the Government at Washington setting forth our desires. You Gentlemen will tell us what to do, and now we will listen to any proposition you may have to make.

Judge WRIGHT. Is the land you are now living on a part of the country you speak of in your petition?

SELTICE. Yes, certainly. This is the middle of it. That which was taken lies outside all around this.

Judge WRIGHT. In your petition you say you need a saw and grist mill; mechanics to teach you trades; cattle and sheep.

SELTICE. It was a saw-mill and flour-mill.

Judge WRIGHT. Do you people need wagons?

SELTICE [after consulting with chiefs]. No; we do not need these, because we have them.

Judge WRIGHT. We believe you to be reasonable men, and we think we can pull together with you like two well-broken horses. To-morrow we will meet again. What you say is plain and frank, and it gives us pleasure. The kind manner in which you speak of the Spokane Indians, and your consent to their coming and living with you, does you honor. They can be saved by bringing them here. They will be ruined if they remain where they are. The Great Father will be pleased when he hears your kind words. It will make him feel kindly towards you.

THURSDAY, *March* 25.

Commissioner ANDREWS. Perhaps it may be well for me to say a few words to you this morning before proceeding to the business which has called us together, in order that you may be permitted to judge of the feelings which control me as well as the feelings of my two associates who addressed you on yesterday.

I, too, am the friend of the Indian, and as such friend have been sent by the honorable Secretary of the Interior, the honorable Commissioner of Indian Affairs, and by the Great Council of the United States from the seat of Government at Washington, 3,000 miles away, to this beautiful spot, the Cœur d'Alene Reserve, in the Territory of Idaho, to visit you and assist in righting the wrongs which you and your friends say have been inflicted

upon you. And now, right here, I want you to understand that we were not sent on account of our great ability to deal with Indians, but because we have proved to the Great Father upon more than one occasion that we are the friends of the red man, and that we hold his rights as sacred as that of any white, black, or red man on earth. We have been commissioned to treat with you upon high and holy grounds; to give you all the rights ever accorded to any people by the wisest government on earth. We were told by the Great Father of your advancement in civilization, but little did we expect to see what we now see. Little did we expect to find you occupying the finest lands of the great West—well watered, well timbered, surrounded by all things to make life happy, with the best schools we have ever seen anywhere, with children that can teach more than half of the Government clerks in Washington how to read and write. And last, though not least, little did we expect to find such good men of God as your best earthly friends. The good fathers here are constantly looking after your welfare here and preparing your souls for the world to come. When we report all these things to the Great Father in Washington it will make his heart glad, and he will exclaim: "Long life to the Cœur d'Alenes of Idaho." I shall tell him that the brand of strong drink does not disfigure the face of a single Cœur d'Alene; that not an eye is dimmed by its damnable sting; that there is not an inch of the Cœur d'Alene Reserve poor enough for a whisky-seller to place his unholy foot. And, lastly, I will tell him that my prayer to Almighty God was, and said aloud in your hearing, that not one drop of strong drink should ever enter the throat of a Cœur d'Alene Indian. Take this from a friend, and with such a promise faithfully kept, with such a climate and such lands as you own, with such teachers as the good fathers and sisters of De Smet Mission, with such a friend as the great Government of the United States to protect and defend you, and, lastly, with such a noble specimen of a true and brave American as Seltice as your chief, you will be the happiest people on earth.

SELTICE. I will assure you now I am glad that you have given us such good advice. I am sorry that the white men have bad habits. We are well pleased with all you have said. You talk to us of goodness and I am glad to hear those words coming from your lips to-day. We will cherish your words in our hearts and remember them always. My heart is well pleased with all you have said.

Judge WRIGHT. Do any of you wish to speak? If so, we will hear you now.

DAMAS (chief). I am going to say a few words only. The chiefs will speak for us; we leave everything to them and whatever they say or do will all be right, as we are all of one heart and mind.

Judge WRIGHT. My friends, since our adjournment on yesterday we have given all the questions which have been discussed our careful attention. We have prepared a paper to be submitted to your council. It will all be carefully read over to you, and interpreted so that all will understand its contents. It may be that some changes will be made. When everything is fully understood by you and an agreement reached, we will have the paper written in ink ready for signing. If in reading over the agreement there is anything you do not fully understand, or any part you wish changed or left out, you can say so.

Commissioner Andrews then read the agreement and it was carefully interpreted. After the reading of the agreement Judge Wright said: If you agree to what is here written it will be submitted to the Great Council and the Great Father for approval. If when they examine it they are pleased with it and think it good for you and good for the Government they will approve it and it will become a law. Should they disapprove it will be as a blank paper. Our duties, then, you see, are of a delicate nature. If we please you we may not please the Government. We must satisfy both or our work amounts to nothing. If the agreement meets your approval and is ratified by Congress it will undoubtedly place you in a condition in which you can be self-supporting with your present advanced position. You will soon need nothing from the Government but the protection which it gives to all its citizens alike. You will have no use for Government farmers, smiths, doctors, or agents; you can get things without aid.

SELTICE (chief). I will assure you now. It may take me two hours, as you have spoken much. I am glad you have taken the time, for it has not been lost. We have listened very carefully and have understood everything that you have said, and it was good. You have put new life into our veins and made us feel that the Great Father and yourselves are the true friends of our race. We know that we are Indians, yet the same Great Father cares for us all. You have spoken to us of the Spokane Indians and of your great desire to help them. We also desire to see them happy people and that they come on this reservation. Just as the whites have poor relations, so have the Indians too—one on our father's and two on our mother's side, and thus am I related on my ancestors to many tribes in this country, and to them I extend the privilege of settling on our land; and I also ask the privilege of having good half-breeds come also. There is one thing which the whites do which we do not—they marry our women, but we never marry white women.

I have considered everything you have said to us; I have considered well, and we are willing to have all these Indians come, but they must leave their whisky and their cards behind them. They must not bring whisky and cards here. This is for their good and the good of my own people. I do not want any bad people to come here and set my people an evil example. Everything you have said to us is good. One thing you have spoken to us about is our land, which the whites have taken away from us and which they now occupy. It is lost to us; it is dead to my people. We had almost forgotten it, but it has come back to our minds and we now speak of it. You say we may receive for our lost land $150,000—for our land outside the reservation. Do you know how much there is of it? There are more than 4,000,000 of acres. This land was very dear to us, but we have given it up to the whites. We are on only a small part of our country—I mean this reservation. Here we have made our homes; here we have built our houses; here are our fences, our farms, our school-houses, our churches. Here are our wives and our children; here are the graves of our ancestors; here are our hearts; here we have lived, and here we wish to die and be buried. We want these preserved forever.

We understand that the paper which we signed is to go to Washington to be seen by the President and the Great Council. I know your hearts with regard to it, and they are good. However you fix it, it will be right; but I plead with you, I implore you, I call on the Great Father, who will hear me, preserve for us and our children forever this reservation, where are our schools, our churches, our homes, our graves, our hearts. The Government has now thought of our claims for our lost land, and they have sent you to us. Of this we are glad, but neither money nor land outside do we value compared with this reservation. Make the paper strong; make it so strong that we and all Indians living on it shall have it forever. We also wish you to make our schools and our churches so strong that they will be here forever for our children, when we have passed away from the world and gone to the Great Father above. What has been said by you is all good, and we thank you for it. You have now seen our hearts; they are laid open and made bare before you.

Judge WRIGHT. You have done yourself great honor by your words; we honor and thank you for the words you have spoken. You have shown yourself worthy to be the leader of your people. They ought to feel proud of you. If they will but follow where you lead they will have but little to fear.

We have endeavored to carry out your desires. The Government will protect you and your lands. It will do so if it takes its whole power. It will also protect and encourage your schools.

If none of you desire to say anything more, we will prepare an agreement in writing for your signatures; we wish you all to be present; we will not delay you long.

SELTICE. We will be glad to see you again in the morning. You have the hearts of all my people. We will leave everything to Washington. Fix your hearts good for us also.

FRIDAY, *March* 26, 1887—9.30 a. m.

Judge WRIGHT. On yesterday we read to you the terms of a proposed agreement. We have carefully considered all the subjects which were then discussed, and have prepared it in proper form for your signatures, with some few changes which were suggested on yesterday. It is now complete. [Here the agreement was read over, interpreted, and explained.]

Do you now understand all the promises?

SELTICE. Yes; we understand everything you have said.

Judge WRIGHT. When we leave here we will next visit the Calespels, or Lower Pend d'Oreilles, and before visiting them we thought it best to obtain your consent that they might be removed to this reservation. If they conclude to come here this will save the trouble and expense of another visit to you.

SELTICE. How about our agent? Is he to be paid out of the fund provided by the agreement?

Judge WRIGHT. No; the agent will be paid by the Government.

SELTICE. All right. We shall not need the sawyer or miller more than a year. By that time we will be able to do the work ourselves. Our people will soon learn to run the mill.

LOUIS GASTAZTAIN. We are all glad you have come to see us. Since you came I have looked into what you have been saying. You have spoken to us of our country. When they ran the survey of our reservation we thought the land was all lost to us. This has been troubling our minds and the minds at Washington ever since. I did not want to take any money; but we are now all of one mind, and we will take it because it will help us. It is not much for the land which has been taken away from us. We are very poor. We are very near the time when we are to sign the paper. We will take good care of the money. When we first came on this reservation we were poor, and now you see us with homes, our farms all fenced, and cattle grazing on our hills. The fathers have

taught us to do this—to farm and save our money and educate our children. I myself can not read or write; but we are very thankful to the Government for our schools. Some of our people are old, and they would like to have their money paid to them before they die, so they can have some benefit from it. You have seen my heart.

ELIJAH (a Spokane Indian, the only one present wearing a blanket). Is Lots' reservation as good as this?

Major WATERS. No; no part of it can compare with it.

ELIJAH. Then I am coming here, and I will tell all my people to come and take up this land; the Cœur d'Alenes are our friends.

Judge WRIGHT. We will sign the paper first and then you can sign. [Here the agreement was signed by the Commissioners and all the Indians. When Nicodemus came up to sign Judge Wright said to him:] I am informed that you were the first Indian on this reservation who took a farm and put a plow in the earth, and I learn that you have done well, and that you are now comfortably situated. Major Waters tells us that you have always set a good example to the Indians, and that hundreds have followed your advice and example. For this you deserve well, and you should be remembered and encouraged.

NICODEMUS. As soon as I began to plow I began to see food and money. I thank you for your words.

Judge WRIGHT. I believe all have signed. A large majority of the tribe have signed the agreement, and those who are not here would sign if they were present. When you tell the absent ones what you have done they will be well pleased. You have behaved well. You have shown your confidence in the Great Father and it will give us pleasure to say that you deserve well of the Government. Your consent that the other Indians not so well off may come on your reservation speaks well for your hearts. Your matters are in a good condition. You are on the right road. Be at peace with one another and your neighbors. In all your transactions as a tribe remain reunited This will give you strength. Advise the Spokanes to come. When they come treat them kindly. If they have faults, pity them and lead them in the right way. Treat them as the Great Father above treats us in mercy. Call them from their evil ways and make them as you are.

ADRIAN UMAS. I am glad you have talked to us from the law. You have made our homes secure. When we are sick the priests hold us in their hands and bring us to heaven. You have told us the truth.

SELTICE. You are now going to leave us and go back to Washington. When you go away do not forget us. Our brains are big and we have put away your words in a safe place. We shall remember them always. We shall not forget you nor your words. We are only Indians. We are not so high in knowledge as you are, but your words of advice make us even with you. Your coming has done us all good. We looked for your coming for many days. Sometimes we feared you would forget us and pass us by. Major Waters did not deceive us; he told us to be patient and you would come. We ask you to take back to the Great Father our humble expressions of peace and good will. The Cœur d'Alenes will ever be his friends. You have lifted a heavy load from our hearts. We take courage and a new start. Our land, or homes, our schools are to be ours forever. All this we feel is from your coming. In the name of my chiefs and my people I thank you.

SAND POINT, IDAHO, *April* 15, 1887.

The council met at 1 o'clock, and was opened with prayer by Rev. Leopold Van Gorp, of Saint Ignatius Mission, Flathead Agency, Mont.

The three commissioners, Wright, Daniel, and Andrews, and the chiefs, head-men and adults of the Pend d'Oreille or Calespel tribe of Indians were present.

The chairman, Judge Wright, then addressed the Indians, as follows: My friends, we have been sent by the authority of the Government of the United States to meet you and talk to you about your present condition and future welfare. We are very glad indeed to meet the chiefs, head-men and people of the Calespels. We are also gratified to see the chief from Chewels, as well as the chiefs of the Flatheads, and Chief Louis, of the Spokanes, sitting with you. I believe this is the first commission ever sent by the Government to the Calespel tribe. We have visited and held councils with many tribes of Indians since we left Washington. I suppose we have visited 15,000 or 20,000. The Indians where we have been have all treated us with respect and kindness, and shown their confidence in us. We have not deceived them but have done our best to do them good.

We are glad that we were also sent to you, and we hope to be able to better your condition. We are well pleased at the appearance of your people. Your old men appear to be cool and sensible, and your young men able-bodied; your opportunities have not been so good

as those of some other tribes, yet we are pleased to learn that you are friendly with other tribes and with the white people and the Government. We learn from Victor that your people have lived for a great number of years at the place where you now live in the Calespel Valley. He tells us that he was born there as well as his father and grandfather, and he has no means of knowing how long his people have lived in that valley.

Heretofore you have made your living chiefly by hunting, trapping and fishing. Your numbers have not increased but have grown smaller. Soon game will all be gone. Victor tells us that white men are also engaged in trapping and hunting on this same ground with you, and soon this source of getting a living will be lost. It is plain, therefore, that as sensible men you must look around and find other ways to support yourselves, your wives, and your children. We learn that a few of you have small farms, and that your country is pretty good for hay. You are so situated that white men will go in among you and disturb you. You have already had some troubles from this cause. There is but little land suited for farming purposes where you now live, and your country is overflowed with water every year. You are so situated that the Government can not reach you easily, and therefore can not assist and protect you as it desires to do. You have no mills, no schools, no farmers, no blacksmith, no physician, no carpenter. When white men come into your valley there is no one there to protect you. The Government wishes you to leave that place and release any claims you have to lands, and remove either to the Colville, Cœur d'Alene, or Jocko Reservation. You are to have your choice.

If you do this the Government will be able to afford you protection and such assistance as will be necessary to make yourselves self-supporting and independent. We propose to build for you a saw and grist mill, houses for each family, assist you in clearing, plowing, and fencing land, and furnish you with horses, cows, wagons, plows, hoes, stoves, clothing, and provisions, so as to place you at once in the line of prosperity.

Those of you who have made improvements on the land where you now are will be permitted to sell them for the best prices you can get. Those who are too old to earn a living by work, the sick and infirm, will be taken care of. When you go to the reservation you can select what place you desire to live at. You can all settle together in one place or scatter about so as not to interfere with the lands already occupied by Indians there.

If you desire you can take for each family and person a home of their own, 160 acres to the head of the family, 80 acres to each person over eighteen, 40 acres to those under eighteen, and 80 acres to each orphan child. But you need not do this unless you desire it. It will be left to your consent, and no part of the reservation will be sold without your consent, and if sold at all, the money is to go to the Indians.

In view of the fact that Victor is growing very old, we also propose to provide that he shall have $100 a year so long as he lives.

We have been with Indians on their reservations who are doing well. We learn that the Indians of the Flathead Reservation, many of them, now make more than they need and have much to sell with which to get money. We have seen that the Indians at Cœur d'Alene are in a prosperous condition, having in one year raised as much as 125,000 bushels of wheat. You can do equally as well if you will but try. Now, if any one were to ask you what you need to make you comfortable and prosperous, you would answer that you need just the things I have told you about.

Some of you are getting old, as I am, and I feel sure that before you go away from this world you will desire to see your families comfortably provided for, and these young men ought to be looking forward to a better condition in life. I see many little children here around me who ought to be at school. All this can be had if you will but accept our offer.

If any white man or Indian advises you not to accept this offer, if you will watch him closely you will find that he is not your friend, but is working for some purpose of his own.

I have talked plainly to you, and I wish you to talk to one another and talk to us as friends, without fear, shame, or embarrassment. If the Great Father had cared nothing for you he would have left you alone and would not have sent us to you. It was because he desired to improve your condition and help you that we were sent.

I have said strong things to you because I am deeply in earnest. I have held many high positions in my life as a member of the great council and as a judge. Of course I feel some pride in all this, but if I could see all the Indians in the United States comfortably situated in homes of their own and living happily, and could feel that I had been an instrument in bringing it about, I would feel more pride than in any acts of my life. I hope your ears will be open to the words of the Great Father, receive his kindness in your hearts, and not refuse his hand when he offers it to you.

Chief Marcella arose and said:

You are the Commissioners that we heard had been sent to us. We heard that Commissioners were coming to find out our hearts. We do not know what you wanted to

see us about. You say we will be happy. We will not be happy till we go to the other world. The little quarter of money you offer will not make us happy. We will not be happy till we die. I am a chief, and these are my people. We wish to talk together in council, and we will talk with you again to-morrow at noon.

SATURDAY, *April* 16.

Council met according to adjournment, and was opened with prayer by Rev. L. Van Gorp.

Judge Wright again urged upon the Indians the importance and great necessity of the Indians agreeing to the proposition of the Commissioners. He again recapitulated the dangers they were in if they persisted in remaining where they now are, and the great advantages accruing to them by their removal to the Jocko Reservation.

Chief Marcella and Nicola and Victor made brief responses, in substance stating that they loved their country, that the Great Spirit had made their country and given it to them, and it would be criminal in them to give it up and remove to another place. They made no objection to the terms offered them by the Commissioners. They expressed some fears that in case of their refusal to remove the Government would be offended and would in some way punish them for their refusal.

Judge Wright again addressed them in reply to the chiefs, and urged them to ponder seriously before making a refusal, and urged them to meet the Commissioners again, expressing the hope that by reflection they would come to a different and wiser conclusion.

The Indians then asked that they might be permitted to talk again on the next day, Sunday.

Council met Sunday morning, as per adjournment, after religious services in the council hall. The Indians again reiterated their determination not to leave their country.

They were again urged in every proper manner to change their minds and accept the kind offers of the Government, after which an adjournment was taken until Monday.

MONDAY, *April* 18, 1887.

After prayer by Rev. Father Van Gorp, Mr. Andrews read over the agreement carefully, having the same fully interpreted to the Indians, followed by Judge Wright, who again urged its acceptance.

Victor said: We are now talking about our country, not our land. Our land is not for sale. I will tell you about our land. It follows the Pend d'Oreille River to Salmon River, and then goes on to the top of the mountains between here and Colville, to the steam-boat landing; goes over the top of the ridge to the Missonta River at the ferry, down the Missonta to its mouth to the Pend d'Oreille line; runs through the lake near Horse Plains, up towards the Kootenate country, then up to the head of Pach River, then to Salmon River. That is my country. It is a big country. That is my country. Maybe you want to get some of my country from me. (Victor then described a reservation which he wanted set apart as his own.)

If you will give me that I will be glad. I want the land my beaver is on. I want the white man to quit catching my beaver and game. If the Great Father wants to help us he will make white men quit catching beaver, but mines we care nothing for.

Nichola said he would talk some time, but not now. What the old chief said all of them say.

Judge Wright then told them the Commissioners had no power to lay off a new reservation. There were too many reservations already. The Government wanted to reduce them, not increase them. They had done this in Minnesota and elsewhere. It was the settled policy of the Government and it would be carried out, and the Indians might as well know it. What we offered is better, and if we had the power to lay off another reservation it would not be good for you.

VICTOR. I would like for you to see my home. I take care of an old blind woman. What will she do? I don't know what to do with the old blind people who are blind and crawling about. What will become of them? Must I take them and pack them on my back to the Flathead Reservation?

Chief MARCELLA. What I say is from my heart. It is about this land where we are now. I see you Commissioners here. You have been traveling among Indians. What the old man told you about my country is my country. He asked for a reservation, and said he would give you the balance. You are after land; you can't do that. I am well off. I am rich. It is from my country that your people are rich. White men come from Washington. I thought they were a poor people. They come to my country and in three years they get well off. You take my body away from me just like you robbed me. By and by it will be the end of this world. When I die I will see the good country where I am going. I would like that what you say was different. I call my people my chil-

dren because I am a chief. When my people want to go somewhere I tell them to go and keep quiet and not be bad; don't steal, don't break anything from the Ingin. If they do steal or do anything wrong it is as if I did it. I would pay for it if I had done it myself.

Judge Wright then said: "Tell the old chief that one reason why we were sent was in order to take care of the blind, the old, and the sick. The Government will carry them to a good country and take care of them. We did not come to get land. The Government has much land. We came to place these Indians in a better situation and protect them."

Chief Marcella said: "One Chief (meaning God) will put us in a good country and take care of us. He will judge me. I don't know what I will do to-morrow; our Chief in Heaven will take care of us. I don't know when I am to die; God only knows that. To-day you are talking to me; you are chiefs and you are like me; I think now it is my Chief in Heaven who wants you to talk that way to me. You say I will feel sorry by and by if I stay here.

I think myself after I die I will see something about what you are telling me. You said I was at the forks of two roads, and now I am living yet and all the people are living yet. Yes there is a road. When we die we will see the roads; one goes to the good country and one goes to the bad. God will show me the two roads."

Nichola said: "We are talking. You tell us what the Great Father said. I told you what our chief said we all want; what the Great Father said is good, not bad. We like to hear what he says. We don't throw that away. Our chief asked for a piece of land. If I did not like what Great Father saw I would not ask for land, and give the balance away. I want Great Father to be glad and us to be glad also. We want to be good friends with the Great Father. That is why we ask for a piece of land. When a chief does right for his people he does right for his country. My chief wants to have a good heart for you. I am a friend of everybody. The Ingen thinks, this is my country and I will live here and die here. I am living in comfort in my country and you want me to go away to another place; my heart is as hard as a rock. If you talk strong to me my heart will not move. Why don't the Great Father take pity on my old chief? The Great Father thinks he made all the world. Why don't he say, I want to ask the Indians if they want to go to a good country and if they don't want to go they can stay? We would be glad to hear that, and the old chief would. My country is my father and mother. I hate to leave my father and mother. Would you be willing to leave your father and mother?"

Michael, chief, said: "Because it is only you white men that talk, it is so. It is not my talking what I talk; I don't know nothing what is in this world. When you talk to me I take your word, because I don't know anything. That is the reason my heart feels good. The priest told me to act this way, and I take care of their words. It is only the white people that have talked. An Indian talks just like he is not talking; I hate to talk. I don't know what to do. I hate to say. If you was alone I would know what to say. If you did not tell us good I would not talk. You tell us what we will get, and I hate to tell you no. I take your word. I say yes, I will do it. I tell you now I will take your word. I see what you have been doing with Indians all around here. I do not put myself chief, because I did not put myself chief. I tell you all right. That is all I have to say."

Pieree says: "I put myself with the chief who has just spoken."

Judge Wright again spoke and urged them to accept, and expressed his surprise that their hearts were sorry when such offers were made. He thought they would be glad. He asked them to consider well the propositions and meet the Commissioners again in the morning.

Chief Marcella said: "Going to a fine country will not make him stand better with God. God will not respect a man because he is rich."

Nicola said: "I don't get mad with the Great Father. We are only talking. Can't leave his country, which is his father and mother, and don't think you would."

TUESDAY, *April*, 1887.

Council opened with prayer.

Judge WRIGHT: We are glad to see you again. The Great Father would be glad were he here. The Great Spirit is pleased to see his children meeting together as friends. I hope you have thought much of what was said to you on yesterday. We as Commissioners for the Great Father are now ready to sign this agreement, and we hope you are ready.

Victor again spoke, asking for a separate reservation; Nicola following in the same strain.

Judge WRIGHT: This can not be done. We were not sent here with such power. We wish you to go to a reservation already made. This is the only hope for your people.

If you accept this offer you will be provided for and made comfortable; if you refuse it you will be ruined. You know you have had trouble already. The Great Father can not protect you where you are; he wants you to go where he can protect you.

Nicola asked if the Great Father made all the country, and [addressing the Commission] said, "If you will say the Great Father at Washington made all the country, and all the people, and all the beasts, I am ready to go to the reservation."

Judge Wright told them the Great Father had given them their choice of three reservations; if they could not choose, did they wish to leave it to the Great Father to choose for them? You know you have a poor country.

Nicola said he did not think the Great Father ought to take his country away from him. I will stay in my country if I have trouble. I don't like to leave my country. The Great Father wants me to leave my country. I will stay in my country. I know my country is a bad country, but I will stay on it. The Indians here don't want a good country. It is not to get rich we want.

Judge Wright then said the Commissioners are ready to sign the agreement, and asked the Indians if they were.

Chief Marcella said, "No. We are talking about our country. You ask us to move from our country, and we tell you no."

APRIL 21, 1887.

Judge Wright said: "You asked for one more day before closing. We have given you another day. We have been with you a long time. We must come to a close. We have had many talks. We are now well acquainted. We understand all you have said and all you have asked for. We know you understand all we have said. We have listened patiently to one another, and I hope we are friends. We have in the name of the Great Father made you a good offer. We came as your friends and from your friends. If you accept our offer it will place your people in a good condition where you will be safe and at peace. You have said you understood us and we can remain no longer. We have other places we must go and see other Indians. The Commissioners, as the agents and representatives of the Government, have signed the agreement. Here it is, plainly written, containing all the provisions we have told you about. It has been correctly and carefully explained over and over again. It is all good. One Chief, for himself and his people, has said yes; they are a majority. We want you all to consent. If you do so, all will be right. If you refuse we will report to the Great Father what you say. We feel that our hearts are clear, and if trouble comes we can not be blamed."

Victor said: "I was once the chief. I am now old, too old to manage my people. My son Marcella is now chief. I understand all you have said. If you give me what I want and what I ask for it will make my heart happy. If you give my piece of land on my own land for my people, my heart will feel good. My heart is not bad. My heart don't feel bad towards the Indians, the whites, nor anybody. If the Great Father says 'Yes, I want your heart to feel good, take this piece of land you ask for,' I will feel happy."

Nicola said: "That is what our heart wants; all these Indians on this side want this. Our hearts are all with the Great Father, the great Chief in Washington. I want to give him a big piece of land and keep a small piece for the Indians. If you do what Victor has asked we will all be happy and laughing, and we will have good hearts."

The Commissioners again assure the Indians that their request can not be granted; that no new reservation can be laid off; that they must go to one of the three reservations named. They were again told of the great necessity for their removal and the benefits they would derive from it.

Chief Michells again reiterated his willingness and that of his people to accept the offer of the Government.

Council with Flatheads, etc., Flathead Reservation, Mont.

The Commissioners met the various bands of Kootenais, Pend d'Oreilles, and Flathead Indians at St. Ignatius Mission on Tuesday, the 26th day of April, 1887.

There were present the Commissioners, John V. Wright, J. W. Daniels, and Henry W. Andrews, the chiefs and head-men of the various tribes, and many other Indians.

The council was opened with prayer by Father Van Gorp, of the Mission.

Judge WRIGHT then spoke as follows:

"My friends, as Commissioners of the United States, we shake hands with the Flatheads, with the Pend d'Oreilles, and the Kootonais. We thank you for assembling so promptly on our call, and we thank you for the imposing and friendly greeting which you gave us on yesterday. We have traveled over much of your beautiful reservation, and it has filled us with delight and admiration. Nowhere can there be seen a more beautiful reservation. Your vast and fertile plains, watered with clear and health-

giving streams, skirted with grand mountains, impresses us with the belief that you are indeed blessed beyond most Indians. But what has pleased us more is to find you living in comfortable houses, surrounded by good farms, and all striving to make a support and bring yourselves and your families to independence. We visited your schools on yesterday, and there we saw your children well clothed and well provided for, and exhibiting such progress in learning that it makes our hearts glad, and gave us assurance that in a few years your children will be intelligent, moral, and self-supporting. It was our earnest desire to visit you at an earlier day, but business of great importance with other Indians in different States and Territories detained us so that we could not come until this time.

"You have a large reservation, and although you have many Indians on it, there is much more land than you and your children will use for many years to come. It is doubtless known to you that the white people have been coming this way for many years, and that they much desire to have your reservation opened to white settlement. It is not right that great bodies of land should be permitted to remain unoccupied and uncultivated. It is a part of the policy of the Government of the United States to reduce Indian reservations to proper size when they are out of all proportion to the number of Indians living on them. In order to avoid this trouble the Government desires, where it can be done, to settle Indian reservations with Indians, and open to settlement abandoned reservations. We have not come to open your reservation to white settlement. It is not a part of our instructions to do this, but it is a part of our business to get your consent to the settlement of some other Indians on this, your reservation.

"The Spokane Indians who reside around Spokane Falls, in the Territory of Washington, are poor, and otherwise in a bad condition. They are in the midst of the white people, and are exposed to many troubles. Many of them have no homes and no land. A part of our business was to induce them to remove from that place, and take homes on the Colville, Cœur d'Alene, or this reservation. We have recently come from Spokane Falls, stopping with the Calespels at Sand Point, in Idaho.

"A few of the Spokanes expressed a desire to remove to this Reservation, but the most of them prefer to go to the Cœur d'Alene Reservation. The Cœur d'Alenes, in the councils we held with them, gave their consent, and agreed, that not only the Spokanes but Calespels and other Indians might come and live on their reservation. The Calespels desire to come here, but before removing them it is our duty to get the consent of the tribes on this reservation. The Calespels or Pend d'Oreilles as you know are of the same blood of the Pend d'Oreilles here. They are very poor and have very poor lands. They are wild and have no advantages, no schools, no churches, no agent, and indeed nothing but the poor living they make by hunting and fishing. The Great Father has pity on them and he thinks you should also pity them and allow them to come and live with you. In the agreement which we made with the Spokanes and Calespels, we provided for giving them homes and houses, farming implements and provisions to give them a start. What we want is that you shall give a cheerful consent to this arrangement. It will do them great good and it will also do you good. It is plain that if your reservation were settled up with Indians the white people would quit asking for it, and even if they continued to ask they could not get it, as the Government is your friend and will spare no pains to protect you and advance you in your pathway to civilization.

"There is another thing I wish to say to you. Some of your chiefs have told us that you are much in need of a saw and grist mill on this side of the mountain, which lies between here and the agency. We know it is a long way from many of you to the mill, too far to be of service to you. We therefore propose, if you so desire, to agree that a saw and grist mill shall be built and a miller and blacksmith furnished so as to accommodate those who live on this side.

"Some of you have also told us that you desire to make provision for your schools and the farms and buildings attached to them. This we will also do if you desire it. If you wish that the fathers who have built the houses and opened the farms may continue to use them for these purposes, we will put in the agreement according to your wishes if they are reasonable. I have now explained as well as I can the nature of our business, and we would be glad to hear what you have to say about it."

The three leading chiefs, Arlee, of the Flatheads, Michael, of the Pend d'Oreilles, and Aeneas, of the Kootenais, after a moment's consultation, replied.

Chief ARLEE said:

"The land belongs to me. I am Arlee, chief of all the Flatheads. We are glad to see you here. We expected you last fall but you did not come. We heard that you passed by on your way west. You have now returned and we are glad. We have much to talk about to you, about our country and the railroads, and about our judges. We wish to talk about many things. I was in Washington. I shook hands with the Great Father. I will tell you all. We will meet again to-morrow. What you have said is all good. We are glad you have come."

Chief MICHAEL said:

"We heard you were coming many months ago, and then we heard you had gone by us and we were afraid you were not coming. We are glad to meet the Great Father's Commissioners. You come as friends. We have heard what you say and we understand all. My people will all agree to what you say. We wish to do what our Great Father wants. We will throw no brush in his way. We have pity on the Calespels. They are my kinsmen. We say yes; let them come. We say the same to the Spokanes. We are willing to give them homes on our lands. We wish the land lent to the fathers. They have led us on the good path. They teach our children and make them good. We will not sell our land, but we will lend it to the fathers for schools and churches."

Chief Aeneas expressed similar views for his people.

Judge WRIGHT. Shall we proceed now?

The CHIEFS. No; we will council together to-night and meet you again to-morrow.

The council then adjourned.

FRIDAY, *April* 29.

Council met as per agreement; prayer by Father Van Gorp.

Judge WRIGHT. We have prepared an agreement in accordance with what was said on yesterday, which will now be read to you and fully explained.

Commissioner Andrews here read the agreement, at which the closest attention was given as requested by the Commissioners, and each article plainly and fully interpreted to the Indians.

Chief ARLEE. We don't wish the land sold to the fathers.

Chief MICHAEL. We did not understand on yesterday that the land was to be sold to the fathers.

Judge WRIGHT. The agreement does not say that the land is sold. You only agree that the land and houses may be used by the fathers as long as they use it for school and church purposes, and no longer.

Chief MICHAEL. Now we understand you, we are all willing to lend our land to the fathers.

Chief ARLEE. We are willing to lend the land; this is all right. We are satisfied with it. I now have something to say. I want to make some complaints. My people do some hunting; there is game on our reservation and my people hunt and kill deer and other game; we want ammunition. Why is it that our Great Father will not allow us to buy powder, shot, and cartridges? We are peaceable, and we will do no harm; we will do only good; we will not shoot the Indian nor the white man; we want to know why our Great Gather will not let us have cartridges. Is it that he is afraid we will kill his people?

Another thing. The white men make cards and they make whisky. They gamble with the cards and they drink the whisky. If whisky and cards are bad, why don't the white people quit making them? They tell us they are bad. Why do they make them and use them? If these things are good and not bad, why will not the white man allow the Indians to have them? I wish you to tell me this. I want to say more. I wish to say another thing about the railroad. When the Great Father sent a commission to ask my people to allow the railroad to be built on my land, he told them if they would allow the railroad to pass through he would let my people ride free without paying money for it. Now he has got the railroad and he won't let us ride. The cars run over my cattle and my horses and they will not pay me for them. I want the pay. Where is the money? We can not get it. They run the cars over my people and kill them. I want the railroad taken off my land. I want it moved away over the land of the whites. I don't want it on my lands. I tell my people not to hurt the road, nor to tear it up. You need not be afraid, we will not trouble the road. I want it taken off my land.

I do not want white men to come on my land and cut the trees and dig up the minerals. We do not wish them to do this. We want them kept off. Some of them bring their cattle on my land and eat up the grass. We don't want this. We want the grass for our own cattle. We want our reservation marked all around so that white men will not come on it. We do not want the judges and the policeman. They do not act right. They do wrong. We want the head-men of the judges to decide the cases. We don't want all three to decide. The head-man ought to decide. How is it when one judge is one way and two the other? I want you to answer this question. We don't want any judges or policemen. We want the chiefs to rule the people. Is it right for the judges to have sick men whipped? And women? They have whipped sick men and they had a woman whipped who was pregnant. She told them she was in that way, but still they had her whipped. And she had an abortion. Do you think that was right? When the judges decide a case does anybody else have anything to do about it? Can there be any appeal? They say they have made laws. We don't want their laws. Let the chiefs make the laws for the people. This is the way Indians do. What do the whites do

with a man who commits murder? Do they hang him? Tell me what they do and what we should do. I want to know.

Judge WRIGHT. When we get through signing the agreement I will endeavor to explain all these things to you as fully as I can. They are all important questions and I am glad you have spoken of them. We are very glad you have so readily consented to the agreement. You have shown your respect for the Government. And you have shown your good sense. It will be pleasing to the Great Father to hear of the way you have acted and how well you are doing. It is gratifying indeed, that of all the Indians here there is not a single one who opposes the agreement. A large majority of you are here, and no doubt the balance will all agree as you have done.

Chief MICHAEL. We all understand the agreement; all of my people will sign it. I am Chief of the Pend d'Oreilles.

Chief AENEAS. All of my people are not here. What I do all will do and agree to. I am a friend to the white man. I am a friend of the Great Father. I live a long way from here. My people live a long way. We are poor. We have no mill near us. I think it is 90 miles from where I live to the agency. We have no saw-mill to give us lumber; we have no carpenter, no blacksmith, and no farmer to show us how to work. I want you to ask the Great Father to give us these things so we can support ourselves and our children. This is all I have to say.

Judge WRIGHT. The Calespels have agreed to come to this reservation, and I understand they intend to settle not very far from where the Kootenais are. We have agreed to build a saw and grist mill for them, and you (Aeneas) and your people can get your wheat ground there, and also get lumber with which to build houses. In the agreement we are making here to-day we also provide for the building of a mill on this side, and you can also have the benefit of that, as the agent no doubt will put it where it will accommodate the largest numbers and the most needy.

Chief AENEAS. That will be all right.

After the agreement was signed Judge WRIGHT spoke as follows:

"My friends, the business for the transaction of which this council was called has been completed. You have done well. You have shown your good sense. Your respect for and confidence in the Government, as well as your kind feelings toward your less fortunate brothers, the Spokanes and the Calespels. All this we will carry back to the Great Father, and we know he will be well pleased with you and your actions this day. You will never be sorry for what you have done. You will always be glad." Addressing Chief Arlee Judge Wright said: "I will now endeavor to explain to you the things which seem to trouble your mind. You complain that your people are not allowed to buy cartridges. I will tell you why this is so. The Great Father knows that you and your people do not use your guns to shoot white men or to shoot one another. This is not the way with all Indians. Some tribes want guns and ammunition to use in wars against one another and to hurt the whites. It was because of these that the law was passed which forbids selling ammunition to Indians. There are many Indians in the United States besides you. The laws must be made general—must be made for all—as it is not always in the power of the Government to find out where there should be an exception made.

"You seem also to be dissatisfied about the railroad which runs through your land. You say that in order to induce you to give the right of way through your reservation you were promised free passages on the road. This is so. I have read the speeches which were made to you when the right of way was asked, and you were told that you should have free rides on the road. For some reason, I do not know what, it was not so written in the agreement which was made with you. It may have been that it was forgotten. I do not know how it was done.

"For a long time your people were allowed to ride free. At the last session of Congress a law was passed forbidding the granting of free passes. It did not say that free passes should not be issued to the Indians, but the railroads said they thought it included Indians. I did not think so. We think when the railroad managers come to look into the question, and when they find that you were promised free rides, they will in good faith stand up to the promises made at the time. Your agent, Major Ronan, tells us that he has already received a letter from the company telling him you will be permitted to ride free on the reservation. We think the Government will see that you have your rights. You also complain that the railroad trains kill your cattle, and that you get no pay for it. In all countries where railroads are this sometimes happens. It can not be provided against. We understand from the agent that you have been paid, and I am sure you will be paid in all proper cases.

"It sometimes requires time and delay. This is the way with the white people also. Because of these things you ask that the railroad be removed from your land. This can not be done. The railroad is of great importance to you, as it is to all the country. By it you get cheap and safe travel, and it brings you things you need and could not get

here without great cost. You ought to be glad you have a railroad, and not sorry; not interfere with it, but do all in your power to render it safe and certain. Other Indians where we have been, who have no railroads, have asked for them, and want them to run through their country. This should be the way with you. As to your timber, mines, and grass I have to say that no white man has any right to come on your reservation and carry off your timber or dig for minerals without first getting lawful permission. The Government will protect your reservations in this regard. It has protected other Indians, and it will do the same for you. You need have no fears about this. Neither are white men allowed to drive their cattle or other stock on your reservation to eat your grass.

"If this occurs report it to Major Ronan and he will see to it. Your reservation is so large that it can not be fenced in on all sides so as to keep stock off, and if white men's cattle stray on to your lands and are not driven on you should not hurt or injure them. If they are driven on report it to your agent and he will attend to it for you. As to your judges and policemen, you should be glad that you have them. It is a good thing. White people have judges and police officers all over their country. They are not given to hurt you, but to protect you against outsiders and against bad men among you. They are for the protection of the weak against the strong. There must be some power to decide when men can not agree, and somebody to see that the decisions are carried out. As you advance you will more clearly see the advantages of having good judges and good policemen. You should all respect and obey them. If necessary you should aid them. If they do wrong it can be corrected, but you can not get along without them. Among the whites all are made to obey them, even the Great Father and all other high officials. If the great chief of the whites obeys the laws the chiefs of the Indians should also. A good chief will make his people obey the judges and submit to the law. It is a bad chief who does otherwise. The Freat Father will not respect a chief who gives his people bad advice or sets them a bad example.

"You have three judges. We are told that they are good and sensible men. We know them, and we say that they are good men; all of them. When they try a case they should all talk together and try to do exactly right. If two think one way and one another way, the two must govern. This is the way with the white people. No man is perfect, and all men, however good, may make mistakes; but when the judges decide, that is the end of it and all should stand by their word. The Great Father has given you these judges and laws to protect the poor and weak, for he feels as much for the poorest and weakest Indian as he does for the greatest chief among you. The use of whisky and of cards is an evil to both the white people and the Indians. Good men among the whites advise their people not to get drunk and gamble. Indians should not do it. It is the cause of most of your troubles. Wise men among you know this, and he is a bad chief who advises his people to drink and gamble. The Great Father will not respect or favor such a chief. As to white men coming on to your reservation to live, I say that if your women will quit marrying white men you will have nothing to complain of on this account. Every one having Indian blood in his veins has equal rights on the reservation as long as he behaves himself, but men who do not obey the laws and regulations will not be allowed to remain; they will be sent away. This is the law. Some of the whites impose whipping as a punishment for crime. All do not. You should not whip a sick man or a woman. This is wrong. It is unusual and cruel. I learn that you are mistaken about a pregnant woman having been whipped, and I am glad to hear it was not so. I think you should treat your women better than you do. You make them do much hard work that you ought to do yourselves. It is enough for a wife to take care of the children and the housework, and attend to the garden, and things like that. The hard work you ought to do yourselves. Among the whites women are respected and protected, and we hope to see the day when you will do the same. Wherever we have been we have seen the women too much imposed upon. We would be glad to see this different.

"Among the whites, when a man murders another the law says he shall be hung A man may kill another in order to save his own life, and if one man provokes another so as to put him in a great passion and in that passion he kills the other the punishment is less; but all who kill are punished, unless done in self-defense.

"But let me say to you that if you will all behave yourselves, and when you have troubles submit them to your judges and obey them, you will not have these troubles to talk about. If you will not do right you must be made to do, and punishments will follow. The good Indians have no reason to fear laws, judges, or policemen. It is only the bad who have these things to dread. This reservation is not for the Flatheads alone. It is for all of you and those who are to come in it. You should all be friends and have the same heart. This will make you strong. If you become divided, you will be weak. A big bunch of sticks all bound together by one cord is not easily broken; but take one stick at a time and all can soon be broken. This is the way

with you. You have a good agent. The Great Father looks on him as one of the best in the service. That is the reason he has been agent so long. He tries to do right by the Great Father and right by you. Major Ronan does everything he can for you, and he gives your people everything the Government sends here to you. He will not cheat you nor tell you a lie. We have seen what he has done for you, and what he is doing now. It is your duty and for your interest to respect and obey him in all things. He knows better than you what is best to be done for you and what is not best.

"If Major Ronan were to do an intentional wrong he would be sent away before many sun's rise.

"And now I have answered all your questions, and I hope you are satisfied with my answers. Soon we go away from you and I may not see you again, but it would give me great pleasure once more to visit your rich and beautiful reservation and find you all living on good farms, in good houses, well furnished, your lands well fenced, and your hills covered with stock. All these you can have if you will but do your duty and take advantage of the opportunities offered you."

Commissioner ANDREWS then addressed the council:

"My friends, as we are about to part, after having discharged the duty imposed upon us, and I trust to your entire satisfaction and to the satisfaction of the Great Father at Washington who sent us to your beautiful reserve—perhaps never again to meet—you to return to your homes and we to visit the Indians of a far distant State, I take the liberty of addressing a few words to you.

"There is no question before the Great Council at Washington in which the good men and women of the country take one-half the interest that they do in the Indian question, and that interest is not lessened as the years go by; but as the rights of the Indians are more fully understood, the people are demanding that the Great Council shall respect those rights and give to the Indians a part, at least, of what is their just due from the Government. In this connection I can assure you that the Indians of the Great Northwest, of which you, the old and brave confederated bands of Flathead, Pend d'Oreille, and Kootenai Indians of the Jocko Reserve form such a large part, are not neglected by the Great Father and his Council, but in all their talks your rights and condition are duly considered, all your known wants supplied, and your future welfare and happiness closely studied.

"I know of no tribes of Indians in the United States, or elsewhere, who have so many things to be thankful for as the Indians of the Jocko Reservation, in the Territory of Montana. You are blessed with the finest climate to be found in America. You have on your reservation the grandest prairies of the Great Northwest; you have the purest streams of living water that man has ever seen; you have the most magnificent ranges of mountains in the world; you have one of the very best men in the service of the Government as your agent, Major Ronan, known as well in Washington as he is in Montana, as the great friend of your race, and I only repeat what I have heard many honest members of your tribes say since we came among you, and I have no doubt every Indian on the Jocko Reservation joins in the wish, 'we want him always.'

"You also have to guide you to the happy hunting-ground of the great hereafter good and noble fathers of your church, who voluntarily left their homes and loved ones in far distant lands to spend the remainder of their lives in promoting your present and future welfare. They have also established here at Saint Ignatius Mission schools for the education and civilization of your children, which are not excelled by any schools for the education of white children anywhere in the United States.

"Where, then, I ask, is there a people more blessed than you? With all the comforts of civilized life, with good health and such happy surroundings, with such brave and manly men as Arlee, of the Flatheads; Michael, of the Pend d'Oreilles; and Aeneas, of the Kootenais, as your chiefs, what more can you ask to make your lives one continuous scene of happiness. Then, my friends, place your hands upon the plow, raise up the wheat, the corn, the oats, and the potatoes, and your hearts will be glad. But do not, I pray you, raise up the whisky bottle to your lips, for it will make your hearts sad. Whisky is your curse, as it is the curse of the white man; it has brought down to early graves more brave, strong, and noble sons of the forest by far than the bullet ever did; it destroys the Indian's manhood while living, and takes from him all the happiness God intended he should enjoy. You had better by far be bitten by rattlesnakes and die of their poison than to drink the whisky sold in this northwestern country and die from its poison.

"We are now about to take our leave of you, and should the Great Council at Washington approve the agreement which we have this day made with you, you nor your children will, I trust, never have cause to regret that the Great Father sent us to you."

BOIS FORTE BAND OF CHIPPEWAS.

The Commissioners met the Bois Forte band of Lake Superior Chippewas of the La Pointe Agency, Minn., at the reserve on Vermillion Lake, near the town of Tower, Minn., on Tuesday, April 17, 1887. Present, Jno. V. Wright, Jarred W. Daniels, and Henry W. Andrews.

The council was at once opened, when Judge WRIGHT addressed the Indians as follows:

"We have been sent to you by the President of the United States as Commissioners, to lay before you the wishes of the Government and to talk to you freely about matters which greatly concern you.

"We were near here last winter, intending to visit you then, but the winter had set in and we found it impossible to carry out our plans, and so we concluded to go to other places and put off our meeting with you until this time. Before we came here we had visited nearly all the Chippewa Reservations in Minnesota, and had seen the Indians at White Earth, Red Lake, Leech Lake, Cass Lake, Lake Winnebagoshish, White Oak Point, Gull Lake, Mille Lac, and Fond du Lac. If you will listen to me attentively I will tell you what our business is with you. The Chippewas were once a great and powerful people. They were all united and lived in the same country. When our fathers came to the shores of the great water they met your ancestors there, who were the same blood with you and spoke the same language. Your tribe has always been friendly with the whites and have rendered valuable assistance in time of great trouble. We are glad to learn, since we came here, that you still retain the same friendly relations with the white people. The whites with whom we have talked give you a good name for peace and quiet. The Indians in this State are called Mississippi Chippewas and Lake Superior Chippewas, but they are all of the same blood and tribe. You have become scattered into different bands and live in different places, and many have poor lands and find it hard to make a living. The game is all gone, or nearly so, and you must make your living in some other way. The President knows your history and condition, and he desires to help you and put you in a situation to make an honest living and improve your condition. You have but few friends. Most of those you meet out here come to get what you have and help themselves, caring but little what becomes of you. The Government is your best friend, and the only one willing and able to help you. There was no other purpose in our coming but to do you good. You should listen to our advice and regard us as friends. We have seen many Indians in Minnesota, Dakota, Montana, Idaho, and Washington Territory. They all received us kindly and treated us well, and we confidently expect the same of you. You have a very poor reservation. The land is very poor and the climate too severe. You have frosts many months in the year, and in some years frosts every month. Even if your land was good the cold weather will prevent the raising of crops here. The best white farmers could not make a living here by farming. They will tell you this. They do not want your country for farming. You have no valuable timber, and so far as we know, or can learn, no minerals. Your annuities derived from the sale of your land will soon expire and what will you do then? There is nothing can be raised here except, perhaps, potatoes. What will become of your old people and these little children? You should look to this and study well the propositions we came to make to you.

"In summer time you may live on fish and berries, and what few potatoes you raise, but when and how are you to get clothing and the other necessaries of life? It is plain there is no good fortune for you here. The Government, seeing your condition, has sent us to you to make you an offer, which, if you accept, will make you comfortable and self-supporting. It is the same proposition we have been making to all the other bands of Chippewas in Minnesota, and nearly all of them have acted wisely and willingly accepted it. I hope you will do as the others have done. We wish to get all the Chippewas in Minnesota to remove to and live together on the White Earth Reservation. This was purchased several years ago by the Government and has been saved for them and you. It has thirty-six (36) townships, enough land for all, and more too. The white people want it very much for themselves, but the Great Father has preserved it for you. If all the Chippewas go there it will be so near filled up with Indians that the white people will cease to want it and to ask for it. It must be occupied and worked, either by white men or Indians. It can not be allowed to remain unoccupied. So you see it is important, in order to save this rich and beautiful land it must be settled by Indians. The land there is rich and will produce wheat, corn, oats, rye, and all vegetables. It is well watered with lakes, rivers, creeks, and springs, and has plenty of good timber for buildings, fences, and fire-wood. Its lakes and rivers abound in fish and fowls, and hay, wild rice, and berries grow there in abundance. It is indeed said to be the very best land in the State of Minnesota, and the best for Indians. The railroad runs near the agency, and all you may have to sell will be in reach of a good and ready market. It has al-

ready good schools, churches, stores, saw and grist mills, doctors, farmers, blacksmiths, carpenters, and other mechanics. Everything is prepared for you if you will only accept our offer, which I will fully explain to you before I get through. It is not far from here, and none but people of your own blood and language live there. You are neither asked to go far nor among strangers.

"We want you further to agree that the Government may sell this reservation for the best price which can be obtained for it and have the money used for your benefit. It is not likely that it will bring much, certainly not more than you will need to fix you up on your new homes. The Government does not wish to buy your land, nor does it wish to take a dollar of its value from you. It is all to be yours and used for your benefit. The other Indians here agreed that their land may be sold, and what theirs brings and what yours brings is all to be put together in the same place and kept and expended for the benefit of all. The lands of the other tribes is more valuable than yours, and so you see you not only get what your own land brings, but a part of what the lands of the others brings. Before coming to you we thought it best to go to White Earth and see the Chippewas there and get them to consent to your coming and the consolidation of your funds. We were with them for many days holding council with them. They behaved well and kindly towards you, and although they well knew their lands were worth more than yours, they readily consented that you might come. They opened their arms, their hearts, and their lands to you, and wanted you to come. After going to White Earth we went to the other reservations, and they all, with one exception, agreed to our proposition. We have been on the White Earth Reservation, and know what we tell you about it is true. [Here the speaker asked if any of the Indians in the council had ever been on the White Earth Reservation, to which they replied that they had not.]

"The interpreter whom you all know, and who is of your own race, has been there and he will tell you that all I say is true."

[Here the agreement with the other Chippewas was read, interpreted, and fully explained to the Indians.]

"What we ask you to do has been done by the others, and in order to encourage you I will tell you how those other Indians on the White Earth Reservation are getting along.

"When the White Earth Indians were removed to that reservation they were poor. They had nothing. They were afraid to go, but there were brave men among them who advised them to go, and they went. Since they have been there their numbers have increased. Year after year they have been improving. In one year they have raised and gathered 40,000 bushels of wheat, over 30,000 bushels of oats, 5,000 bushels of corn, 7,000 bushels of beans, 5,000 bushels of turnips, plenty of onions, 5,000 bushels of potatoes, 5,000 tons of hay, 2,000 bushels of rye, and hundreds of bushels of other kinds of produce. They have 400 head of horses, 1,200 head of cattle, 7,000 hogs, 2,500 turkeys and chickens. They made 3,000 pounds of butter, much of which they sold for money. They have over 5,000 acres of land under cultivation, and 12,000 acres fenced. They live in good houses, dress comfortably, and have their children at good schools. During our visit to the West we visited another tribe of Indians, the Cœur d'Alenes of Idaho, who have done even better than this, and all without any help from the Government.

"This is the way all Indians should do, and this is what we want you to do. You can do it. You are as strong as they are. You show that you can work and that you are willing to work, but you can do nothing in the way of farming here. The land is too poor and the climate too severe. We are surprised that you get along here as well as you do. Your means of making a living here are poor, and soon you will not have even the advantages you have now. These white men who are coming through here hunting for iron will soon be through with their work, and then you will have no employment, and you must finally look to farming as a means of support. Nothing can be done for you here. The Government, if it would, can not help you here, as there are no farming lands worth the name on your reservation. I repeat to you what I have said to the other Chippewas, that if white men had such an offer made them the White Earth Reservation could be filled up in a month. All the white men you see here would accept such an offer at once.

"I do not know that any more need be said. If there is anything in the agreement that you do not understand, let us know what it is and we will explain it to you."

The Indians have selected some of their number to speak for them. They all charged that the Government had failed to comply with the promises and treaties in the past, and that they did not wish to remove until all arrearages were paid. They said they thought they could make a living where they are.

Judge WRIGHT, continuing, said:

"We remember but one treaty you have ever made with the Government, and that is the treaty of 1866.

"We know you have been receiving annuities under that treaty for many years, and perhaps there are some more to be paid, but these will run out and then you will have nothing but this poor land. So far as your land is concerned, you will get nearly as much under this agreement as you have here and far better. The land on the White Earth Reservation would, if offered for sale, bring $20 per acre. I doubt whether yours could be sold for a dollar an acre in fifty years.

"It is our duty to tell you that under our instructions you may go to either of the Wisconsin reservations if you so desire and prefer them. We can not, however, offer you as great inducements to go there as we can to go to White Earth, because that is the best, and, besides, by going to White Earth you will get a part of the consolidated funds provided for in the agreement with the Mississippi Chippewas, but if you desire to go to Wisconsin we will offer you terms which will make you comfortable and self-supporting.

"You say some of you have settled on land outside of this reservation with a view to perfecting titles under the homestead laws. We have added an article to the agreement protecting your rights fully as to homesteads. You also claim that under former treaties there are arrearages due you, and which you have never received. In order to fully satisfy your minds about this we have prepared and now offer you another article: '*Providing*, as soon as it can be done after the ratification of this agreement, that it shall be the duty of the Commissioner of Indian Affairs to examine the books of his office, and whatever is found to be due shall be paid you in full.' These two additional clauses answer all your objections, and there can now be no good reason why you should not at once accept the kind offers of the Government. You know it is a good offer. You know that all I have said to you is true, and we hope you will act as wise men and make preparations for the future welfare of yourselves, your wives, and children."

The speaker for the Indians again reiterated that they were all opposed to being moved. He said that they had counciled together, and that was their unanimous conclusion.

Judge WRIGHT. Is this the conclusion of you all?

The Indians replied that it was.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 64.

DEFICIENCY APPROPRIATIONS—STATE DEPARTMENT.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Estimates from the Secretary of State of deficiencies in appropriations for 1887 and prior years.

JANUARY 11, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 10, 1888.

SIR: I have the honor to transmit herewith for the consideration of Congress copy of a communication from the Secretary of State of the 7th instant, submitting certain estimates of deficiencies in appropriations for 1887 and prior years, which he requests may be included among those which are to receive the early attention of Congress.

Respectfully yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, Januarg 7, 1888.

SIR: I have the honor to acknowledge the receipt of your letter of the 1st ultimo in relation to the estimates of deficiencies for 1887 and prior years, etc., and in reply to request that, in addition to the statement to be submitted by the First Comptroller, and the items submitted by this Department last year, which were included in the Book of Deficiency Estimates, but to meet which no appropriation was made, the following items may be included in the estimates of deficiencies to be submitted to Congress at its present session, viz:

(1) To pay secretaries of legation for services rendered as chargé d'affairs *ad interim* during the two years ending June 30, 1880, $30,000.

(2) To refund to John T. Robeson, late consul of the United States at Beirut, on presentation of proper vouchers therefor to the Department of State, $600, being for moneys expended by him for clerk-hire at said consulate during the fiscal year 1885.

(3) To permit the unexpended balance of the appropriation for a national monument at Plymouth, Mass., to be expended for statues for said monument.

(4) To supply a deficiency of $500 in the appropriation for procuring evidence relative to the French spoliation claims.

It is very desirable that all of these items be included among those which are to receive early consideration by Congress as urgent deficiencies. I have no estimates of deficiencies to submit at this time for the fiscal year 1888.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

Hon. CHARLES S. FAIRCHILD,
Secretary of the Treasury.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 65.

BUREAU OF THE MINT.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Director of the Mint of an appropriation for an encaustic tile floor in the laboratory, Bureau of the Mint.

JANUARY 11, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 10, 1888.

SIR: I have the honor to transmit herewith, for the favorable consideration of Congress, copy of a communication from the Director of the Mint of the 7th instant, requesting an early appropriation of the sum of $540 for an encaustic tile floor for the laboratory connected with the Bureau of the Mint.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary of the Treasury.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
BUREAU OF THE MINT,
Washington, D. C., January 7, 1888.

SIR: I have the honor to state that the dilapidated and really disgraceful condition of the laboratory of the Bureau of the Mint, in particulars dependent on the application of general Treasury appropriations for "repairs, etc.," has reached a point of exigency which compels me to urge a special estimate by way of "urgency deficiency" for at least a floor of plain encaustic tile, at a cost of $540, as per proposal from lowest bidder; such a flooring to cover the disintegrated cement floor, the dust and dirt from which are in the last degree incompatible with the delicate nature of the operations for which this laboratory is maintained.

Respectfully, yours,

JAMES P. KIMBALL,
Director of the Mint.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 66.

OUT-BUILDING AND REPAIRS, BUREAU OF ENGRAVING AND PRINTING.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Chief of the Bureau of Engraving and Printing of an appropriation for the erection of a necessary outhouse for the use of that Bureau, and for repairs.

JANUARY 11, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 10, 1888.

SIR: I have the honor to transmit herewith, for the favorable consideration of Congress, an estimate of appropriation submitted by the Chief of the Bureau of Engraving and Printing, under date of the 5th instant, for the condemnation of lot 12, square 231, and for the erection thereon of a necessary out-building for the use of the Bureau, and for repairs.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
BUREAU OF ENGRAVING AND PRINTING,
January 5, 1888.

SIR: I have the honor to submit herewith a copy of a report made to me, under date of December 3, 1887, by James J. Mitchell, inspector of heating, hoisting, and ventilating apparatus, office of the Supervising Architect, giving the results of his inspection of the building occupied by the Bureau of Engraving and Printing, and recommending an appropriation of $28,450 for the following purposes:

Out-building	$23,000
Pointing, cleaning, oiling, and penciling main building	4,250
Painting wood-work, main building	675
Painting iron-work around grounds, etc	450
Painting iron stairs	75
Total	$28,450

The report sets forth the importance and necessity of these various expenditures, and I respectfully recommend that an estimate of an appropriation of the above amount for the purposes mentioned be submitted to Congress.

OUT-BUILDING.

During the last five years the attention of the Department and of Congress has repeatedly been called to the urgent necessity for the erection of a suitable out-building for this Bureau. This building is needed in order to provide proper accommodations for the carpenter shop, the stable and wagon house, the grinding of dry colors, the mixing and grinding of ink, and the storage of coal and other supplies and materials.

The carpenter shop is now in a small frame structure just south of the main building, and from its slight construction and nature of the work carried on it is liable to be destroyed at any time by fire.

The mixing and grinding of the ink is now done in the cellar of the main building, and the powdered color is carried by the belting and otherwise to the other parts of the building, fouling the air and discoloring the walls and ceilings. The lack of space compels the mixing of the dry colors in a dark room in the cellar without sunlight or proper ventilation. The removal of these processes to the rooms provided for them in the plan prepared by the Supervising Architect for an out-building would remove these difficulties, and would also enable the Bureau to buy the dry colors in the lump and grind them in its own mills, which it is very desirable that it should be able to do in order to insure that the ink is of the proper quality, but which can not be done with the present facilities.

There is now no provision whatever for storing or even sheltering the coal, of which more than 2,200 tons a year is used. It is dumped in lots of about 100 tons at the rear of the building, and wheeled in barrows into the boiler room as required. It lies exposed to the weather until used, and, while being dumped and handled, gives rise to a thick dust, which penetrates the building and interferes seriously with the operation of some of the more delicate machinery. Space for storing at least 130 tons is provided in the proposed out-building. The stables, wagon house, and harness and storage rooms are now in temporary wooden structures ill-suited for the purpose, not in keeping with the main building, and in danger of destruction by fire. The original plans for the building of the Bureau included an out-building, but it was not built for lack of funds.

ACQUISITION OF LOT.

The proposed building can not be built, however, until the grounds of the Bureau have been extended by the addition of lot 12, in square 231, as there is not room for it on the present grounds. This lot is the only one in the north half of that square not owned by the Government. By its acquisition the grounds of the Bureau will be so extended as to embrace all the space bounded by Fourteenth street west, B street south, Fifteenth street west, and the alley running east and west through square 231. The lot which it is desired to acquire is the second one from the southwest corner of this half square. It fronts on Fifteenth street, and runs back to a cross alley which extends northward for a short distance from the main alley dividing the square. This cross alley has no outlet northward, abutting in that direction against the Bureau grounds and its maintenance is due entirely to the necessity for an

outlet from lot 12. The lot and the alley together cut off access to lot 11, belonging to the United States, on the southwest corner of the half square, and leave but a narrow passage way to the rear of the Bureau building. Were lot 12 the property of the Government, this short alley would be discontinued, and the space occupied by it and by lots 11 and 12 would be thrown into the grounds of the Bureau, thus providing ample space for the erection of the proposed out-building.

The plans for this building contemplate a long, low structure of brick, built upon the rear part of the grounds of the Bureau as thus enlarged, and extending along the alley which divides the square. The necessity for this extension of the grounds has been recognized by Congress, and an appropriation of a sum equal to 50 cents a foot was made by the act of June 16, 1880 (21 Stats., 260), for the purchase of this lot with three others, but the owner declined to accept that price, and the Government has therefore been unable to acquire title to the lot. The owners of the other three lots, the purchase of which was provided for, accepted the price tendered. Two of the lots thus acquired abut on Fourteenth street, and a lodge and other buildings have been built upon them. Of the third lot (No. 11) no use has been made by the Government for the reason that lot 12 intervenes between it and the other grounds of the Bureau, and so cuts off access to it. In the absence of any general law authorizing the condemnation of private property for the use of the General Government, title can be acquired only by virtue of a special act of Congress. A draught of a bill for this purpose prepared by the Solicitor of the Treasury is herewith transmitted, with the request that it be transmitted to Congress with a recommendation for favorable action.

Respectfully, yours,

E. O. GRAVES,
Chief of Bureau.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

TREASURY DEPARTMENT,
Office of the Supervising Architect, December 3, 1887.

SIR: In accordance with your request, I inspected the building occupied by the Bureau of Engraving and Printing, and respectfully submit the following report with my recommendations:

The large pile of coal lying in the open air west of the building should be removed, as the dust therefrom is blown against the building, soiling the walls, and rendering frequent cleaning necessary. This fine coal dust is blown into the cellar, much to the detriment of the health of the employés, and sometimes rendering worthless the costly inks manufactured in the basement and used in printing notes.

Portions of the brick-work of the main building need repointing, especially that part below the water-table, and the entire structure needs cleaning, oiling, and penciling, in order to properly preserve it from the effects of the weather.

All the wood-work, both exterior and interior, needs painting very much, as do also the front and rear iron steps.

All the exterior iron-work, including fence around the grounds, railing around the area-ways, columns at elevators, stairs at boiler-house, etc., needs one coat of paint.

The unsightly and combustible frame buildings on the south side of the main building, used for storage purposes, work-shops, etc., are totally inadequate for the purpose, and are a constant menace to the Bureau proper, on account of their liability to fire.

In view of the above facts, I have to recommend that the frame building above referred to be removed, and that the Government purchase the tract of land lying between the main building and the lot owned by the Government farther south, and erect thereon a brick building suitable and adequate for stabling, storage of fuel, etc., and work-shops.

This is absolutely necessary for the proper transaction of the public business and to decrease the danger of fire. The drawings now on file in the office of the Supervising Architect show the necessity for an out-building in connection with the Bureau.

The estimated cost of such a building, including a substantial coal-cellar, is.	$23,000
Pointing, cleaning, oiling and penciling the main building	4,250
Painting wood-work of main building	675
Painting iron-work around grounds, etc	450
Painting iron stairs	75
Total	28,450

All of which is respectfully submitted.

Very respectfully,

JAMES J. MITCHELL,
Inspector of Heating, Hoisting, and Ventilating Apparatus.

Hon. E. O. GRAVES,
Superintendent of Bureau of Engraving and Printing.

A BILL to authorize the acquisition of title to lot 12, in square 231, in the city of Washington, District of Columbia, as an addition to the present site of the building of the Bureau of Engraving and Printing.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, should the owner or owners of lot 12, in square 231, in the city of Washington, District of Columbia, refuse to sell and convey said lot to the United States as an addition to the present site of the building of the Bureau of Engraving and Printing before July 1, 1888, at a cost not exceeding 50 cents per square foot, the Secretary of the Treasury is authorized and directed to acquire the title to said lot for the United States by condemnation, and, for that purpose, is authorized to make application to the supreme court of the District of Columbia by petition, containing a particular description of said lot by metes and bounds, with the name of the owner or owners thereof, and his, her, or their residence, and the said court is hereby authorized and required, upon such application, after legal notice to the owner or owners, to appoint three commissioners, who are freeholders of the District of Columbia, and acquainted with the value of real estate in Washington City, to make, under oath, a just and equitable appraisement of the cash value of said lot, and the Secretary of the Treasury is authorized and required to pay to the owner or owners of said lot the amount specified in the appraisement, made as herein provided, or he may deposit said amount for the owner or owners with the court in payment thereof; and a sum sufficient to pay for said lot, whether the title thereto is acquired by purchase or condemnation, is hereby appropriated out of any moneys in the Treasury not otherwise appropriated. The said court may issue any order or process which may be necessary to give the United States possession of said lot. Any costs that may accrue by reason of said appraisement shall be taxed and paid as the court may direct: *Provided*, That before payment is made for said lot, whether the title thereto is acquired by purchase or condemnation, the title shall be examined and approved by the Attorney-General.

C

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 67.

DISTRICT OF COLUMBIA CONVICTS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Attorney-General of an appropriation for the support, maintenance, and transportation of District of Columbia convicts, for criminal statistics, and for procuring information concerning penal institutions.

JANUARY 11, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT, *January* 10, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General, of November 29, 1887, amending the amount and phraseology of the estimate of appropriation, to be found on page 238 of the Book of Estimates for 1889, for "support of convicts," to read as follows:

For the support, maintenance, and transportation to and from the penitentiary of convicts transferred from the District of Columbia; for the collection of criminal statistics, and for such expenses as are necessary in procuring information concerning penal institutions, to be expended under the direction of the Attorney-General, $20,000.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, November 29, 1887.

SIR: I have the honor to request that in submitting the estimates for appropriations for the Department of Justice, for the fiscal year 1889, to Congress, you will, in referring to the appropriation for "Support of convicts," make the estimated amount required $20,000, instead of $5,000 as previously reported necessary from this Department. This additional amount is needed in consequence of a recent act of Congress (February 23, 1887) prohibiting the employment of United States pris-

oners on contract, the effect of which, however, so far as the class of convicts referred to in this particular appropriation was concerned, had not been seen at the time of submitting the estimates in August last. The Department is now compelled to pay a stated per diem for the support of all prisoners convicted in the District of Columbia, confined in the Albany penitentiary, for whose maintenance, formerly, the Government was at little or no expense. In addition, the cost of the transportation of these prisoners to the penitentiary, and their return from the penitentiary to the place of conviction upon the termination of their sentences, must be paid from this appropriation.

In view of the above, I have to ask that you will make the estimate for the appropriation read as follows:

"For the support, maintenance, and transportation to and from the penitentiary of convicts transferred from the District of Columbia, for the collection of criminal statistics, and for such expenses as are necessary in procuring information concerning penal institutions, to be expended under the direction of the Attorney-General, $20,000."

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 68.

UTE INDIAN LOSSES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Secretary of the Interior of an appropriation to reimburse Colorow and other Indians for losses sustained in 1887.

JANUARY 11, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 10, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior, of the 7th instant, submitting an estimate of appropriation to reimburse Colorow and certain other Ute Indians for losses sustained by them in 1887.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, January 7, 1888.

SIR: I have the honor to inclose herewith for presentation to Congress, in accordance with the provisions of section 2 of the act of July 7, 1884 (23 Stat., 254), an item to be inserted in the bill making appropriations for the Indian service for the fiscal year ending June 30, 1887, providing funds for the payment of Colorow or Colorado, and other Ute Indians, for losses sustained by them during the summer of 1887, by reason of being hastily driven from Garfield County, Colo., by the civil authorities of that State, aided by its militia.

The property lost by the Indians consisted mainly of horses, cattle, sheep, and goats, which they were grazing upon the public lands in Colorado, and also dried meat, robes, and peltries, which they were compelled to abandon, and some of which was seized and taken from them.

The accompanying extract from the last annual report of this Department shows briefly the history of the matter out of which these claims originated.

The claimants number thirty-two individual Indians, and the accompanying itemized account of their respective claims aggregates the sum of $30,925.25, after deducting the value of 450 sheep subsequently recovered and restored to Colorow, stated at $1,125.

The Commissioner of Indian Affairs reports in his letter herewith, upon information from General Crook, that very many of the Utes are seriously disaffected, as the result of the unfortunate affair of August last, and that this discontent and restlessness is increasing rather than diminishing, and they ask that restoration be made to them for their losses at that time.

The Commissioner of Indian Affairs recommends that these claims be presented to the Governor of the State of Colorado, with a request for such action as will secure their payment by the proper State or county authorities. This course is perhaps the proper proceeding to take, but it does not, in my opinion, give promise of such speedy settlement of the matter as is demanded by the disturbed condition of the Ute Indians, justice to the individual claimants, and the good of the service; and the request is therefore presented for an appropriation in a sum sufficient to pay the claims, leaving to Congress to direct what, if any, proceedings shall be taken to secure reimbursement thereof from the State of Colorado.

I have the honor to be, very respectfully,

L. Q. C. LAMAR,
Secretary.

The SECRETARY OF THE TREASURY.

Proposed item to be inserted in the bill making appropriations for the Indian service for the fiscal year ending June 30, 1889.

For this amount, or so much thereof as may be necessary to reimburse Colorow and certain other Ute Indians, for loss of live stock and other property sustained by them at the time they were driven from the State of Colorado during the summer of 1887, the amount due each claimant to be ascertained and fixed by the Secretary of the Interior, $30,925.25.

[Extract from Annual Report of the Secretary of the Interior Department for fiscal year ending June 30, 1887, concerning action of citizens of Colorado relative to Colorow (Ute) and members of his band.]

UTE INDIANS UNDER COLOROW.

A small band of Ute Indians, numbering about sixty souls, under Colorow, with Chepeta, the widow of Ouray, a former friendly Ute chief, have been for some time past roaming in the northwestern part of Colorado and pasturing their flocks and herds on that portion of the public domain formerly the home of the tribe, and for which Colorow and his followers have a strong attachment. Though these Indians were peaceably disposed their presence there was reported to be the cause of some annoyance to settlers, but more particularly to the owners of stock cattle, and those employed with the large flocks and herds also grazing upon these public lands.

The agent for the Ute Indians was instructed to require the absent Indians to go to and remain upon the reservation; and in order that want of knowledge of the location of the dividing line between the reservation in Utah Territory and the State of Colorado might not be an excuse for again leaving their reserve, the Secretary of War was requested to detail a competent military officer to plainly mark the boundary.

While these matters were receiving attention and the necessary correspondence, there arose, in August last, considerable excitement in the vicinity of the town of Meeker, in Garfield County, Colo. The United States marshal telegraphed from Denver the 17th that the Ute Indians were on the war-path, and requested that the War Department be asked to send troops. Senator Teller, my immediate predecessor in this Department, telegraphed from the same point on the 29th that the "Ouray Ute Indians in Colorado ought to be compelled to return to their reservation. If they do not there will be trouble." In the mean time it was published in the press that the governor of Colorado had ordered the militia of the State to the scene of trouble, and that he had also called upon General Crook, commanding a military department, for the aid of United States troops. No other or regular application for such aid had come to the knowledge of this Department, which, however, communicated such information as it had to the Secretary of War on August 20, and requested that he have the troops, if furnished, while in the locality use all proper means to induce the Indians to go to and remain upon their reservation.

A request for troops, telegraphed on 24th of August to this Department by Governor Adams, was received on the following day, and he was immediately informed in reply that the President did not consider that any case had been presented under the Constitution and laws justifying the employment of United States troops in Colorado. The belief was also expressed that Colorow and his followers could be induced to return to their reservation if the hostile demonstrations against him were suspended, and he assured against attack; and further, that such line of action, if concurred in by the governor, would be entered upon by the Government.

On the same day Governor Adams telegraphed to the Department that Colorow had signified his desire for a conference, and for that purpose he would start that night for Garfield County, expressing his desire to get the Indians out of the State peaceably, and asking that the officers at Fort Du Chesne be ordered to the scene of trouble to meet him. Upon the belief that this dispatch, received on the following day, indicated the adoption of the line of action suggested in the telegram sent to the governor, he was at once informed by wire that, by direction of the President, Agent Byrnes and General Crook would be instructed to meet and confer with him in reference to Colorow's peaceable return to the reservation. The officers named were instructed accordingly.

Upon receipt of official information of the seizure by Major Leslie of 300 head of Indian horses, which he had corraled at Rangely, to be held until certain Indians were delivered to him, Acting Secretary Muldrow, on August 30, telegraphed the governor, by direction of the President, the request that he would take all proper measures to deliver the horses to Agent Byrnes, who was directed to take charge of the same as soon as arrangements for their delivery had been made. The governor was also asked to co-operate with the agent in collecting the sheep, goats, and other property of the Indians, with the view of restoring the same to them on the reservation. The agent was instructed how to proceed in these matters, and was also directed to remove from the reservation, in pursuance of statute, all persons found therein contrary to law, and to prevent any unlawful encroachments or entries thereon for any purpose, and to call on the military for aid if necessary. He was also informed that the civil authorities of Colorado, and those acting with them, must proceed in the manner provided by law for the enforcement of any process issued by State authority, and that the Government would, if the emergency arose, assist them in orderly and lawful efforts to enforce such process.

I condense the following as the substance of the official reports made on this matter by General George Crook, and of the United States Indian Agent for the Uintah and Ouray (consolidated) Agency: The origin of the excitement was the attempt of the State authorities to enforce the State game and other laws against the Indians, who were surprised and alarmed by the methods employed by a game warden and the sheriff to arrest several of their number under State process for violation of its laws. The Indians, alarmed and evading arrest, were pursued by the sheriff with his posse, subsequently joined and supported by the State militia. Such a procedure was well calculated to precipitate not only resistance, but an outbreak by uncivilized Indians ignorant of the laws governing civilized communities, and wholly unacquainted with the methods employed for enforcing them. They were able to comprehend neither the meaning of a warrant nor the authority of the sheriff. Worse than all, the Indians, who had acted entirely on the defensive all the time, avoiding hostilities, and who in a parley had given assurances that they were going to their reservation as fast as possible in obedience to the instructions of their agent, and had received assurances from those pursuing them that they would not be molested, were attacked in their camp near the border of their reservation while they were quietly cooking breakfast in the midst of their wives and children, were driven from their supplies of dried meat, robes, and peltries, their horses, cattle, sheep, and goats were appropriated or scattered, and only a small portion of them have since been restored to the Indians.

Never have I known Indians to show the submission and obedience to the orden of their agent more cheerfully than in this case. Their faith is in the integrity of the authorities at Washington. Never have I known a case where men have so recklessly and without any excuse so grossly violated the pledges made to a people. After the promise and agreement that no move should be made for fifteen days against them if they would agree to leave Colorado (where they had a right to be), the State authorities followed them, and when the Indians were moving to their reservation carrying out the wishes of the Colorado militia, to prevent trouble, the Indians were fired upon, and one man, two girls, one baby were killed, and seven men wounded.

The Indians have a right to feel sore over their treatment.

The reports and statements of these people are supported by the statements of Lieutenant Burnet and Agent Byrne and other white people, some of them in no way connected with agency or Indians, but who are residents of Colorado.

Respectfully,

FRANK C. ARMSTRONG,
U. S. Indian Inspector.

Hon. L. Q. C. LAMAR,
Secretary of the Interior.

UNITED STATES INDIAN SERVICE,
Uintah Agency, November 11, 1887.

SIR: I have to report that I sent John McAndrews, herder at Ouray, out to the ranch of Mr. A. J. Gregory, 20 miles from Meeker, Colo., and there received from Mr. Gregory 450 sheep and goats, the property of Colorow; these sheep and goats were received by me at Ouray Agency on the 5th instant, and turned over to Colorow.

Colorow's (or Colorado as he is called on the rolls) claim as forwarded you should be charged with 450 sheep and goats at $2.50 per head, $1,125.

Very respectfully,

T. A. BYRNES,
U. S. Indian Agent.

Hon. J. D. C. ATKINS,
Indian Commissioner.

Name of claimant, etc.	Amount.
Acummonguats and Chepita:	
1 horse	50.00
1 horse	30.00
1 horse	20.00
8 raw hides of dried meat, at $5	40.00
40 buckskins, at $1.50	60.00
1 buffalo robe (fancy)	30.00
4 pack saddles, at $2	8.00
1 ax	2.00
2 brands, at $2.50	5.00
1 dish pan	1.50
1 spade	1.50
2 lariats, at $2	4.00
1 willow water jug	3.00
1 camp kettle	1.00
1 copper coffee-pot	2.50
1 Dutch oven	2.50
1 pair Navajo leggings	10.00
1 cup (wood)	1.00
1 Arapahoe pipe and tobacco-pouch	5.00
1 cow-bell	2.50
1 tent	12.00
330 head of sheep, at $2.50	825.00
39 head of cattle (30 cows, 8 steers, and 1 bull, at $30)	1,170.00
8 calves, at $10	80.00
	2,366.50
Ai-ive:	
2 mares, at $50	100.00
1 mare	20.00
2 colts, at $6	12.00
	132.00
Sappovonaro:	
1 horse	50.00
1 mare	25.00
	75.00

Name of claimant, etc.	Amount.
Coparet:	
1 mare	100.00
1 mare	20.00
1 colt	6.00
4 raw hides of dried meat, at $5	20.00
18 buckskins, at $1.50	27.00
1 elk-skin	1.50
6 sheep-skins, at 50 cents	3.00
2 brass kettles, at $2.50	5.00
1 camp kettle	.50
2 cups, at 25 cents	.50
2 squaw saddles, at $3	6.00
1 Navajoe bridle	10.00
1 dish-pan	1.00
2 fry-pans, at 50 cents	1.00
1 ax	2.00
1 sewing case or bag and contents	3.00
	206.50
McCook and wife:	
1 American mare	100.00
56 horses and mares, at $50	2,800.00
25 horses and mares (young), at $25	625.00
20 colts, at $15	300.00
1 tent	12.00
30 buckskins and elk-skins, at $1.50	45.00
3 raw hides of dried meat, at $5	15.00
2 buffalo robes, at $5	10.00
1 Navajo blanket	15.00
1 lot of calico	12.00
1 copper coffee-pot	5.00
1 mug	.50
1 lot of thread	1.00
1 butcher knife	1.25
4 butcher knives, at $1	4.00
5 lariats, at $5	25.00
2 squaw saddles, at $5	10.00
1 ax	2.00
1 hatchet	[illegible]

count, which was prepared upon statements and evidence of the Indians themselves, are as follows:

No.	Names.	Amount.	No.	Names.	Amount.
1	Accummouquats and Chepeta	$2,366.50	18	Topanokent	$230.00
2	Arive	132.00	19	Colorow	782.00
3	Sappovunaro	75.00	20	Coatark	886.00
4	Coparet	206.50	21	Sibello	200.75
5	McCook and wife	3,985.75	22	Waperatz	1,623.75
6	Nannow, wife, and mother	76.50	23	Oegetche	34.50
7	Senka	842.00	24	Moochookanh	142.50
8	Waupenas	1,514.00	25	Chu-up	55.00
9	Wishsheup	1,229.00	26	Wichits	156.00
10	Frank Colorado	581.00	27	Chata	311.00
11	Colorado	6,039.50	28	Warawis	49.25
12	Waratza	1,246.00	29	Ungarpareget	526.50
13	Tooparowits	650.00	30	Patchaorowits (Gus)	2,766.50
14	Avrip	1,323.00	31	Newcowree	15.00
15	Chapin	3,166.00	32	Abe Lincoln	80.00
16	At chee	950.75			
17	Pannaschuwickent	308.00		Total	32,050.25

NOTE.—The stock returned to the Indians prior to September 25, 1887, the date to which the account is brought up, is not included in the foregoing statement, and the only deduction to be made therefrom is reported in letter from Agent Byrnes, dated November 11, 1887, copy herewith, as follows: 450 sheep belonging to Colorow (or Colorado as he is named in the itemized statement) returned, $2.50 per head, $1,125; balance, $30,925.25.

By every consideration of justice these Indians should be fully indemnified for whatever losses they sustained in the recent attack upon them, and they are anxiously awaiting and expecting such settlement.

I believe the county of Garfield and State of Colorado to be responsible for the injuries suffered, and that they are in duty bound to make just restitution therefor, and I have the honor to recommend that the within account be forwarded to his excellency the governor of Colorado with the request that he will take such steps as may be necessary to secure payment to these Indians for their losses by the proper State or county authorities.

In a very recent letter to this office General Crook observes that very many of the Utes are seriously disaffected as the result of the unfortunate affair of August last, and that their discontent and restlessness is increasing rather than diminishing. They ask that restitution be made to them for their losses at that time.

Very respectfully, your obedient servant,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

UNITED STATES INDIAN SERVICE,
Ouray Agency, Utah, September 23, 1887.

SIR: I forward the itemized accounts of the losses of these Indians in Colorado during the recent trouble and attack upon them by the Colorado authorities. Many of the horses were the property of Indians on the reservation, who were merely grazing on public lands in Colorado. Stock and sheep were mostly purchased from sale of skins, etc. Chepeta, wife of former chief Ouray, had saved up what her husband left her. These Indians considered that they had a perfect right to be there, and intended no wrong. When the whites agreed to give fifteen days for them to get everything out of Colorado, they supposed the pledge would be kept, and they were moving out of the State to the reservation when they were attacked. Their property was taken or destroyed, and they are left poor and helpless. They are cut off from the hunt and have to depend on the small ration issued by the Government, scarcely enough to keep life in them. The forcing all the Indians into the agency to draw rations will reduce the issue to each, as the Indians who lived in Colorado and who engaged in hunting drew but small rations.

Never have I known Indians to show the submission and obedience to the orders of their agent more cheerfully than in this case. Their faith is in the integrity of the authorities at Washington. Never have I known a case where men have so recklessly and without any excuse so grossly violated the pledges made to a people. After the promise and agreement that no move should be made for fifteen days against them if they would agree to leave Colorado (where they had a right to be), the State authorities followed them, and when the Indians were moving to their reservation carrying out the wishes of the Colorado militia, to prevent trouble, the Indians were fired upon, and one man, two girls, one baby were killed, and seven men wounded.

The Indians have a right to feel sore over their treatment.

The reports and statements of these people are supported by the statements of Lieutenant Burnet and Agent Byrne and other white people, some of them in no way connected with agency or Indians, but who are residents of Colorado.

Respectfully,

FRANK C. ARMSTRONG,
U. S. Indian Inspector.

Hon. L. Q. C. LAMAR,
Secretary of the Interior.

UNITED STATES INDIAN SERVICE,
Uintah Agency, November 11, 1887.

SIR: I have to report that I sent John McAndrews, herder at Ouray, out to the ranch of Mr. A. J. Gregory, 20 miles from Meeker, Colo., and there received from Mr. Gregory 450 sheep and goats, the property of Colorow; these sheep and goats were received by me at Ouray Agency on the 5th instant, and turned over to Colorow.

Colorow's (or Colorado as he is called on the rolls) claim as forwarded you should be charged with 450 sheep and goats at $2.50 per head, $1,125.

Very respectfully,

T. A. BYRNES,
U. S. Indian Agent.

Hon. J. D. C. ATKINS,
Indian Commissioner.

Name of claimant, etc.	Amount.
Accummonguats and Chepita:	
1 horse	50.00
1 horse	30.00
1 horse	20.00
8 raw hides of dried meat, at $5	40.00
40 buckskins, at $1.50	60.00
1 buffalo robe (fancy)	30.00
4 pack saddles, at $2	8.00
1 ax	2.00
2 brands, at $2.50	5.00
1 dish pan	1.50
1 spade	1.50
2 lariats, at $2	4.00
1 willow water jug	3.00
1 camp kettle	1.00
1 copper coffee-pot	2.50
1 Dutch oven	2.50
1 pair Navajo leggings	10.00
1 cup (wood)	1.00
1 Arapahoe pipe and tobacco-pouch	5.00
1 cow-bell	2.50
1 tent	12.00
330 head of sheep, at $2.50	825.00
39 head of cattle (30 cows, 8 steers, and 1 bull, at $30)	1,170.00
8 calves, at $10	80.00
	2,366.50
Ai-ive:	
2 mares, at $50	100.00
1 mare	20.00
2 colts, at $6	12.00
	132.00
Sappovonaro:	
1 horse	50.00
1 mare	25.00
	75.00

Name of claimant, etc.	Amount.
Coparet:	
1 mare	100.00
1 mare	20.00
1 colt	6.00
4 raw hides of dried meat, at $5	20.00
18 buckskins, at $1.50	27.00
1 elk-skin	1.50
6 sheep-skins, at 50 cents	3.00
2 brass kettles, at $2.50	5.00
1 camp kettle	.50
2 cups, at 25 cents	.50
2 squaw saddles, at $3	6.00
1 Navajoe bridle	10.00
1 dish-pan	1.00
2 fry-pans, at 50 cents	1.00
1 ax	2.00
1 sewing case or bag and contents	3.00
	206.50
McCook and wife:	
1 American mare	100.00
56 horses and mares, at $50	2,800.00
25 horses and mares (young), at $25	625.00
20 colts, at $15	300.00
1 tent	12.00
30 buckskins and elk-skins, at $1.50	45.00
3 raw hides of dried meat, at $5	15.00
2 buffalo robes, at $5	10.00
1 Navajo blanket	15.00
1 lot of calico	12.00
1 copper coffee-pot	5.00
1 mug	.50
1 lot of thread	1.00
1 butcher knife	1.25
4 butcher knives, at $1	4.00
5 lariats, at $5	25.00
2 squaw saddles, at $5	10.00
1 ax	2.00
1 hatchet	1.00

Name of claimant, etc.	Amount.
Chapin—Continued.	
4 buffalo-robes, at $5	$20.00
1 Navajo blanket	5.00
4 raw hides of dried meat, at $5	20.00
2 squaw saddles, at $5	10.00
2 brass kettles, at $2	4.00
1 coffee-pot, 75 cents, and 1 coffee-mill, 75 cents	1.50
1 Dutch oven, $2, 1 lariat, $1	3.00
4 cups, at 25 cents	1.00
20 pounds lead	5.00
10 boxes primers	5.00
8 packages paint, at 25 cents	2.00
1 rifle, $25, 1 case, $2	27.00
1 coat	4.50
38 buckskins, at $1.50	57.00
	3,160.00
At chee:	
1 horse	45.00
1 mare	45.00
2 horses, at $40	80.00
3 mares, at $40	120.00
1 mare	35.00
2 mares, at $30	60.00
4 horses, at $25	100.00
2 mares, at $25	50.00
2 horses, at $15	30.00
3 mares, at $15	45.00
9 colts, at $6	54.00
2 Navajo blankets, 1 at $20, 1 at $25	45.00
5 blankets, at $5	25.00
1 squaw saddle-bags	10.00
1 necklace of beads	15.00
4 pounds powder	3.00
1 Winchester rifle	25.00
1 cartridge belt	2.00
1 knife, at $1, scabbard, at $1	2.00
2 willow water jugs, at $1.25	2.50
4 saddles (pack), at $2	8.00
1 camp kettle (brass)	3.50
7 cups, at 25 cents	1.75
1 case	1.00
Cash	10.00
2 pair leggings (buckskin), beaded, at $7	14.00
1 comb, 25, 1 mirror, 25	.50
20 buckskins, at $1.50	30.00
1 Arapahoe, pipe and pouch	15.00
2 buffalo-robes, at $6	12.00
1 buffalo-robe	3.00
8 raw hides of dried meat, at $5	40.00
1 dish pan	1.50
1 pair moccasins	2.50
1 Navajo bridle	8.00
4 lariats	4.50
2 drawing knives, at $1	2.00
	950.75
Pan nas chu wickent:	
1 horse	50.00
3 mares, at $50	150.00
2 mares, at $20	40.00
3 colts, at $6	18.00
20 buckskins, at $1.50	30.00
1 Winchester rifle	20.00
	308.00
To pan o kent:	
2 horses, at $100	200.00
1 horse	30.00
	230.00
Colorow:	
1 horse	100.00
1 horse	80.00
1 stallion	50.00
4 horses, at $50	200.00
5 mares, at $50	250.00
1 mare	40.00

Name of claimant, etc.	Amount.
Colorow—Continued.	
1 mare	$30.00
1 horse	20.00
2 colts, at $6	12.00
	782.00
Co a tark:	
1 horse	60.00
9 mares, at $50	450.00
1 horse	30.00
2 mares, at $30	60.00
1 stallion	25.00
1 mare	25.00
1 mare	20.00
5 yearling colts, at $15	75.00
7 colts, at $6	42.00
10 buckskins, at $1.50	15.00
5 elks-kins, at $1.50	7.50
1 mountain lion-skin	5.00
4 raw hides of dried meat, at $5	20.00
2 squaw saddles, at $5	10.00
1 blanket	3.00
1 Navajo blanket	5.00
1 brass kettle	2.00
1 dish-pan	2.00
1 buffalo-robe	10.00
2 lariats, at $5	10.00
1 knife	1.00
1 pair squaw saddle-bags	5.00
1 hatchet	1.00
1 tea-pot	1.50
2 fry-pans, at 50 cents	1.00
	886.00
Sibel lo:	
3 horses, at $25	75.00
1 pair squaw saddle-bags	25.00
1 lot calico	1.00
1 lot thread	1.00
1 quilt	2.00
1 willow water-jug	2.00
2 raw hides of dried meat, at $5	10.00
1 ax	2.00
2 knives, at $1	2.00
8 buckskins, at $1.50	12.00
4 elk-skins, at $1.50	6.00
1 tent	17.00
1 brass kettle	1.00
2 squaw saddles, at $5	10.00
1 fry-pan	.50
1 rope	.50
2 lariats, at $5	10.00
1 bridle	2.00
4 sheep-skins, at 50 cents	2.00
1 coffee-mill	.75
1 coffee-pot	1.00
1 dish-pan	1.00
3 mugs (china), at $1	3.00
1 water-keg	1.00
1 drawing-knife	1.00
1 American saddle	12.00
	200.75
Wa pe rats:	
1 race-horse	250.00
1 horse	70.00
2 mares, at $40	80.00
1 horse	35.00
1 horse	30.00
1 mare	30.00
1 mare	25.00
2 yearling colts, at $15	30.00
2 colts, at $6	12.00
350 head of sheep, at $2.50	875.00
1 tent	12.00
30 buckskins, at $1.50	45.00
2 squaw saddles, at $5	10.00
1 buffalo-robe	5.00
1 blanket	6.00
1 suit clothes	17.00
1 brass kettle	1.50

Name of claimant, etc.	Amount.
Wa pe ratz—Continued.	
3 sheep-skins, at 50 cents	$1.50
5 raw hides of dried meat, at $5	25.00
1 lariat, $5, and 1 rope, 50 cents	5.50
1 pair buckskin leggings	5.00
1 pair buckskin leggings	2.00
1 ax	2.00
2 dish-pans, at $2	4.00
2 fry-pans, at 50 cents	1.00
1 coffee-pot	.75
2 knives, at $1	2.00
1 hammer	1.00
3 pairs of moccasins, at $2	6.00
1 willow water jug	2.50
1 bread pan	.75
1 coffee-mill, 75 cents, and one bowl (wood), $1	1.75
1 pocket-book, 50 cents, and $1 cash	1.50
1 Navajo saddle, $5; 1 bridle, $2	7.00
1 saddle blanket	1.00
1 tobacco sack	5.00
3 Arapahoe pipes, at $5	15.00
	1,623.75
Ce get che:	
2 raw hides of dried meat, at $5	10.00
5 buckskins, at $1.50	7.50
1 squaw saddle-bag	2.50
1 knife	1.00
1 knife, small	.25
1 pair moccasins	2.00
1 brass kettle	1.50
1 willow water jug	1.50
1 pair boys' moccasins and leggings	2.00
1 quilt	2.50
1 lot calico	1.00
1 cup	.25
1 fry pan	.50
1 dish pan	2.00
	34.50
Moocho Ka-ah:	
1 tent	14.50
4 raw hides of dried meat, at $5	20.00
28 buckskins, at $1.50	42.00
2 coffee-pots, at 75 cents	1.50
2 squaw saddles, at $5	10.00
1 camp kettle	1.00
1 brass kettle	2.50
2 fry pans, at 50 cents	1.00
1 dish pan	2.00
1 dish pan	1.50
2 knives, at $1.50	3.00
1 ax	2.00
1 buffalo-robe	5.00
1 drawing-knife	1.00
3 sheep-skins, at 50 cents	1.50
1 buffalo-robe	1.00
60 eagle feathers	12.50
1 blanket	3.00
1 A tent	10.00
1 lariat	5.00
2 ropes, at 50 cents	1.00
1 elk-skin	1.50
	142.50
Chu up:	
1 mare	35.00
1 mare	20.00
	55.00
Wich its:	
1 horse	100.00
1 mare	50.00
1 colt	6.00
	156.00

Name of claimant, etc.	Amount.
Chata:	
3 mares, at $50	$150.00
1 horse	15.00
2 colts, at $6	12.00
2 halters, at $2.50	5.00
2 lariats, at $2	4.00
2 squaw saddles, at $5	10.00
1 buffalo-robe	25.00
4 raw hides of dried meat, at $5	20.00
1 buffalo-robe	5.00
1 tent	12.00
1 buffalo saddle skin	4.00
1 camp kettle	1.00
1 fry pan	.50
1 ax	2.00
27 buckskins, at $1.50	40.50
2 elk-skins, at $1.50	3.00
4 sheep-skins, at 50 cents	2.00
	311.00
War-a-wis:	
1 blanket (beaded)	20.00
1 pair moccasins (beaded)	5.00
1 pair leggins (beaded)	5.00
1 lot beads	5.00
5 boxes cartridges, at $1	5.00
3 pounds powder	2.25
4 boxes primers, at 50 cents	2.00
1 lariat	5.00
	49.25
Ungar-pare-get:	
1 horse	80.00
1 horse	70.00
1 mare	60.00
1 horse	50.00
1 mare	50.00
1 mare	35.00
1 horse	25.00
2 mares, at $15	30.00
2 colts, at $6	12.00
1 tent	12.00
2 buffalo-robes, at $14	28.00
2 squaw saddles, at $5	12.00
15 buckskins, at $1.50	22.50
2 elk-skins, at $1.50	3.00
1 suit clothes	12.00
7 pounds lead	1.50
4 kegs powder, at $1	4.00
2 boxes primers, at 50 cents	1.00
2 raw hides of dried meat, at $5	10.00
6 sheep-skins, at 50 cents	3.00
5 pounds baking powder, at 50 c'ts	2.50
3 mugs, at $1	3.00
	528.50
Pat-choo-ro-wits (Gus):	
1 black race horse	500.00
1 black stallion	80.00
2 horses, at $100	200.00
4 mares, at $100	400.00
3 mares, at $90	270.00
6 horses, at $80	480.00
1 mare	80.00
2 horses, at $60	120.00
1 mare	50.00
1 horse	30.00
1 mare	20.00
6 horses, at $15	90.00
3 mares, at $15	45.00
9 colts, at $6	54.00
1 tent	12.00
1 buffalo-robe	25.00
1 buffalo-robe	15.00
1 buffalo-robe	10.00
2 beaded bands for blankets, at $5	10.00
1 pair leggins	5.00
2 squaw saddles, at $5	10.00
2 pairs squaw saddle-bags, at $7.50	15.00
1 Navajo bridle	10.00

Name of claimant, etc.	Amount.
Pat-choo-ro-wits (Gus)—Continued.	
1 Navajo shirt	$10.00
1 Navajo blanket	10.00
1 Navajo blanket	15.00
5 lariats, at $5	25.00
1 willow water-jug	5.00
1 coffee-pot	2.00
1 dish-pan	3.00
1 coffee-mill	2.50
10 cups, at 25 cents	2.50
4 raw hides of dried meat, at $5	20.00
100 pounds flour	6.00
Sugar	4.00
Coffee	3.00
3 knives, at $2	6.00
1 ax	2.00
1 shovel	1.50
1 Dutch oven	2.50
1 drawing-knife	1.00
1 saddle, American	35.00
Pat-choo-ro-wits (Gus)—Continued.	
1 reloading outfit	$7.00
1 saddle	30.00
1 bridle	3.00
1 lariat	4.00
15 buckskins, at $1.50	22.5
4 fry-pans, at 50 cents	2.00
1 lot of paint	10.00
Tanning tools	1.00
	2,766.50
New-cow-ree:	
1 bay horse, yearling	15.00
Abe Lincoln:	
1 bay horse	55.00
1 roan horse	25.00
	80.00

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 69.

PARIS INTERNATIONAL EXHIBITION, 1889.

MESSAGE

FROM THE

PRESIDENT OF THE UNITED STATES,

TRANSMITTING

A report from the Secretary of State, relating to an invitation from the Government of France to participate in the International Exhibition to be held at Paris in 1889.

JANUARY 12, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

To the Senate and House of Representatives:

I transmit herewith a report from the Secretary of State in relation to the invitation from the Government of France to this Government to participate in the International Exhibition which is to be held at Paris in 1889.

GROVER CLEVELAND.

EXECUTIVE MANSION,
Washington, January 12, 1888.

To the PRESIDENT:

I transmit herewith a translation of a note from Mr. Roustan, the minister of France at this capital, extending an invitation to this Government to participate in the International Exhibition which is to be held at Paris in 1889.

The benefits which the commerce, the manufactures, the sciences, and the arts of this country derived from the taking part in the great international exhibitions which have heretofore been held at Paris are so numerous and obvious as to commend to this Government the propriety of accepting the present invitation. That the popular interest in the proposed exhibition is very great is manifest from the numerous inquiries relative to it, representing the most important business interests, which have been received by the Department from all parts of the country.

I therefore recommend that the accompanying papers be laid before Congress, and that that body be asked to enact a law authorizing the

President, by and with the advice of the Senate, to appoint a commissioner-general to represent the United States in the proposed exhibition, and, under the general direction of the Secretary of State, to make all needful rules and regulations in reference to the contributions from this country, and to control the expenditures incident to the proper installation and exhibition thereof, and to the preparation of the reports on the exhibition.

I furthermore recommend that the sum of $200,000 be appropriated, out of any money in the Treasury not otherwise appropriated, to be expended, or so much thereof as may be necessary, in defraying the necessary expenses of the proper installation of the exhibits of American citizens and the expenditures of the commissioner-general made under the direction of the Secretary of State and with his approval.

I also recommend that provision be made by law for the re-entry, free of duty, under such regulations as the Secretary of the Treasury may prescribe, of all articles and merchandise which may be sent from this country to the exhibition in question.

Respectfully submitted.

T. F. BAYARD.

DEPARTMENT OF STATE.
Washington, January 12, 1888.

No. 1.

Mr. Roustan to Mr. Bayard.

[Translation.]

LEGATION OF THE FRENCH REPUBLIC,
Washington, April 6, 1887.

Mr. SECRETARY OF STATE: By a decree bearing date of November 8, 1884, the President of the Republic decided that a world's exhibition should be opened at Paris on the 5th of May, 1889, and closed on the 31st of October following.

I am instructed by my Government to notify you of the opening of this international exhibition, and, in view of the deep interest that is felt in having all nations participate in this enterprise of peace and labor, to ask the co-operation of the United States Government.

To this effect, I have the honor herewith to transmit to you two copies of a pamphlet containing the general regulations, and the text of sundry official documents having reference to the organization of the various branches of the exhibition, and to the admission of productions; also the text of the law of July 6, 1886, relative to financial guaranties.

I should be very grateful to you, Mr. Secretary of State, if it were possible for you to enable me soon to make known at Paris the decision adopted by the United States Government.

Be pleased to accept, Mr. Secretary of State, the assurances of my very high consideration.

TH. ROUSTAN.

Hon. T. F. BAYARD,
Secretary of State of the United States.

WORLD'S EXHIBITION OF 1889.

LAW OF JULY 6, 1886.

ARTICLE I.

The convention concluded by the minister of commerce and industry representing the state, the prefect of the Seine, representing the city of Paris, authorized by the decision of the municipal council of March 31, 1886, and the governor of the Credit Foncier, acting for the Guarantee Association, which is to be established for the World's Exhibition of 1889, is hereby approved.

No expense shall be incurred beyond the amount of 43,000,000 francs, for which provision is made by Article I of this convention, unless provision shall previously have been made therefor by a special law.

Such proceeds as may accrue from payments required of exhibitors for the space assigned to them shall not enter into the computation of the receipts provided for by Article V of the convention, beyond the amount necessary to make the total receipts 18,000,000 francs.

ARTICLE II.

The state shall contribute to the expenses of the exhibition of 1889, by an appropriation of 17,000,000 francs.

This appropriation shall be charged (to the amount of 12,693,635 francs) to the loan of 80,000,000 francs made to the state by the Bank of France, in pursuance of the convention of March 29, 1878, approved by act of the 30th of June following.

In case the expenses shall amount to less than the sum of 43,000,000 francs, which is provided for by Article I of the convention, the saving effected shall inure to the benefit of the state alone.

ARTICLE III.

The sum of 12,693,635 francs shall be allowed, by way of an extraordinary appropriation, to the minister of commerce and manufactures, on the fiscal year 1886, over and above the allowances made by the financial act of August 8, 1885. This allowance shall form a special chapter entitled "No. 43. Amount contributed by the state to the expenses of the exhibition of 1889."

This extraordinary appropriation shall he paid from the source mentioned in the foregoing article.

ARTICLE IV.

The appropriations necessary for the expenses of the years 1887, 1888, 1889, and the following, shall be made, within the limits of the allowance above fixed, by the annual appropriation laws.

Nevertheless, during the recess of the chambers, in pursuance of Article V of the act of December 14, 1879, such appropriations may be made by decrees approved by the council of ministers. These decrees shall be submitted to the chambers for their sanction within the first fortnight after their next meeting.

ARTICLE V.

All moneys for the exhibition shall be received and expended by the officers of the treasury, and shall be submitted to the court of accounts for inspection.

The subsidy allowed by the city of Paris, together with all receipts accruing from the World's Exhibition of 1889, shall be paid into the treasury as funds for public expenses, according to article 13 of the act of June 6, 1843.

ARTICLE VI.

Plans of all kinds relative to the construction, arrangement, and management of the exhibition of 1889 shall, before being put into execution, be submitted to the minister of commerce and manufactures for his approval.

ARTICLE VII.

A detailed statement of the receipts and expenditures of the World's Exhibition of 1889 shall be presented to the President of the Republic in a report which shall be published and distributed among the senators and members of the Chamber of Deputies.

A report published in the same way shall annually make known the state of advancement of the work, and shall furnish a statement of the expenses incurred.

ARTICLE VIII.

The instruments designated in Article 1, paragraph 9, of the act of February 28, 1872, and approved by the minister of commerce and manufactures, in pursuance of this act, shall be subjected to a fixed duty of 3 francs. This act having been adopted by the Senate and Chamber of Deputies, shall be executed as a law of the state.

MINISTRY OF COMMERCE AND MANUFACTURES.—WORLD'S EXHIBITION OF 1889, AT PARIS.

GENERAL REGULATIONS.

Ministerial order of August 26, 1886.

ARTICLE I.

In pursuance of the decrees issued by the President of the French Republic, at the suggestion of the minister of commerce and manufactures, and of the minister of public instruction, fine arts, and worship, an International World's Exhibition shall be opened at Paris on the 5th day of May, 1889, and shall be closed on the 31st of October following.

No production shall, however, be admitted in the exhibition after April 1, 1889.

ARTICLE II.

This exhibition shall receive works of art and productions of the industry and agriculture of all nations.

It shall be held principally in the Champ-de-Mars, in the unoccupied space between Lamothe-Piquet avenue and the square situated near the quay. It may extend—

(1) On the left bank of the Seine, over the causeway and the steeps of the quay, in the parts comprised between the Champ-de-Mars and the Esplanade of the Invalides, and over the Esplanade of the Invalides.

(2) On the right bank of the Seine, in the Trocadero Park and the available parts of the Trocadero Palace, in the Palace of Industry, and on the grounds situated between that palace and the Seine.

ARTICLE III.

GENERAL ORGANIZATION.

An advisory commission, consisting of 300 members, and styled the "Grand Council of the World's Exhibition of 1889," shall be appointed under the presidency of the minister of commerce and manufactures, who shall likewise be the commissioner-general of the exhibition.

ARTICLE IV.

The grand council shall be convoked and presided over by the minister, who shall fix the order of its daily proceedings.

ARTICLE V.

It shall be subdivided into twenty-two advisory committees, to wit: The committee on superintendence and finance, on contested claims, buildings, festivals and ceremonies, transportation, the fine arts, agriculture, colonies and countries under protectorate, military and maritime exhibitions, education, the liberal arts, hygiene, the third group (furniture, etc.), the fourth group (textile fabrics, wearing-apparel, etc.), the fifth group (manufacture of extracts, raw and manufactured productions), the sixth group (mechanical instruments and processes in mechanical industry), the seventh group (articles of food), electricity, the press, musical and theatrical pieces, congresses and conferences, the retrospective exhibition of work.

ARTICLE VI.

The advisory committee on superintendence and finance, which is to be appointed by a decree of the President of the Republic, shall be presided over by the minister, or, in his absence, by one of the three vice-presidents, each in his turn.

It shall be convoked by the minister, who shall fix the order of its daily proceedings.

ARTICLE VII.

This commission shall be consulted by the minister on all questions having reference to the financial management of the exhibition. Its advice shall be acted upon in all cases in which questions are concerned relating to receipts of all kinds to be collected on the occasion of the exhibition.

ARTICLE VIII.

The other committees may subsequently be completed by the addition of new members, to be appointed by ministerial orders.

Their chairmen shall be appointed by the minister.

Their vice-chairmen and secretaries shall be designated by the committees themselves, subject to the approval of the minister.

They may be subdivided into sub-committees, with the approval of the minister, who shall designate the new chairmen.

ARTICLE IX.

The minister shall lay suitable matters directly before the committee and sub-committees.

ARTICLE X.

The directors-general, who are to be appointed in the manner provided by the decree of July 28, 1886, shall be charged, each in that which concerns him, with the preparation and submission to the minister, commissioner-general, of the plans relative to the construction, arrangement, and management of the exhibition. They shall be admitted to all sessions of the committee on superintendence and finance, and to the sessions of the committees having charge of matters connected with their respective branches. They shall at these sessions have the right of discussion, but not that of voting.

ADMISSION AND CLASSIFICATION OF PRODUCTIONS.

ARTICLE XI.

A departmental committee, appointed by the minister of commerce and manufactures, shall be instituted in each department of the French Republic. The duties of this commission shall be—

(1) To make known throughout the department the regulations concerning the organization of the exhibition, and to distribute the blank forms of applications for admission, together with all other documents relating to the exhibition.

(2) To furnish, with as little delay as possible, the names of the principal artists, agriculturists, and manufacturers whose admission to the World's Exhibition shall seem particularly calculated to promote the success of that enterprise.

(3) To promote the exhibitions of industrial, agricultural, and horticultural productions of the department.

(4) To promote and organize, if deemed desirable, the collective grouping of similar productions of the department, and to accredit a delegate, whose duty it shall be to represent each collective exhibition.

(5) To prepare, if this shall be thought desirable, by way of subscription or otherwise, the establishment of a special fund, designed to facilitate the examination and study of the World's Exhibition by a certain number of master-workmen, workmen, and cultivators of the department.

ARTICLE XII.

Foreign commissions appointed at the request of the French Government are urged to send their delegates with as little delay as possible.

The duty of each delegate shall be to discuss such questions as may interest his countrymen, and especially such as relate to the distribution of the entire space among

the different countries, and to the method of installation of each national section. Consequently, the minister, commissioner-general, will not correspond directly with foreign exhibitors, and all productions presented by foreign producers shall be admitted only through the agency of their respective commissioners.

Article XIII.

The departmental committees appointed by the minister and the foreign commissioners regularly accredited to him shall enter into direct relations with the director-general of the management.

The foreign commissioners shall receive from him all suggestions and plans with regard to the most advantageous installation of the productions of their nations, together with all information concerning the conditions of general circulation and of public order to which they shall be obliged to conform.

They shall have recourse to him for all changes of space from country to country.

Article XIV.

In each section devoted to the productions of the same nation, the articles exhibited shall be divided among the nine groups following:

First Group: Works of Art (Class 1 to 5).
Second Group: Education, Instruction, Materials and Processes used in the Liberal Arts (Class 6 to 16).
Third Group: Furniture, etc. (Class 17 to 29).
Fourth Group: Textile Fabrics, Wearing Apparel, etc. (Class 30 to 40).
Fifth Group: Manufacture of Extracts, Raw and Manufactured Articles (Class 41 to 47).
Sixth Group: Instruments and Processes used in Mechanical Industry—Electricity (Class 48 to 66).
Seventh Group: Articles of Food (Class 67 to 73).
Eighth Group: Agriculture, Vine Culture, and Pisciculture (Class 74 to 77).
Ninth Group: Horticulture (Class 78 to 83).

Each of these groups shall be divided into classes, according to the system of general classification appended to these regulations (Annex No. 1).

That document shall comprise for each class a compendious enumeration of the articles which it is to include.

Article XV.

A methodical and complete catalogue of the productions of all nations shall be prepared in the French language. This catalogue shall state the places to be occupied by said productions in the halls, the parks, or the gardens, together with the names of the exhibitors.

Each nation shall, moreover, have the right to prepare, at its own expense, but only in its own language, a special catalogue of the productions exhibited in its section.

Article XVI.

Neither French nor foreign exhibitors shall be obliged to pay any rent for the space occupied by them in the Exhibition.

They shall have to defray all the expenses of installation and decoration in the halls, parks, or gardens. These expenses shall in the main comprise the furnishing and putting in place of the floors, and the tents or ceilings in the halls, and also of the special earth-works and trees or plants set out in the parks or gardens in the vicinity of and within the limits of the special buildings authorized by the minister, commissioner-general.

The floors shall be constructed in good condition for use in all the interior passages through which the public is to pass.

Article XVII.

No work of art, and no article exhibited in the halls, parks, or gardens shall be drawn, copied, or reproduced in any manner whatever, without an authorization from the exhibitor, bearing the visa of the director-general of the management.

The director-general of the management may, however, authorize the reproduction of views of sundry articles together.

Article XVIII.

No work of art and no article exhibited can be withdrawn before the close of the exhibition, without special authorization.

ARTICLE XIX.

Within the time allowed, and on the terms provided by the act of May 23, 1868, relative to the guaranty of inventions susceptible of being patented, and of designs for manufactured articles, exhibitors shall enjoy the rights and immunities granted by the aforesaid act. (Annex No. 2.)

ARTICLE XX.

In pursuance of the decree issued on the 25th of August, 1886 (Annex No. 3), the exhibition is to be, in fact, a bonded warehouse; consequently articles exhibited are to be exempted from the payment of city dues and from search by the municipal authorities of Paris, and also from the payment of duties at the French custom-house and from search there.

ARTICLE XXI.

Subsequent regulations shall in due time determine the methods of shipment, of reception, and of installation of the productions, the method of admission to the premises of the exhibition, and the formation of the international jury on premiums, whose duties shall begin as soon as the exhibition is opened.

SPECIAL PROVISIONS RELATIVE TO WORKS OF ART.

ARTICLE XXII.

The works of French and foreign artists executed since May 1, 1878, shall be admitted to the exhibition.

ARTICLE XXIII.

Such works shall comprise the seven kinds below mentioned:

1. Paintings.
2. Drawings: Water-colors, pastels, miniatures, enamel, porcelain, and cartoons, not including those which represent subjects of ornamentation only.
3. Sculpture.
4. Engravings on medals and precious stones.
5. Architecture.
6. Engraving.
7. Lithography.

ARTICLE XXIV.

The following shall be excluded:

1. Copies, even such as reproduce a work in a style different from that of the original.
2. Unframed paintings or drawings.
3. Sculptures in unbaked clay.

ARTICLE XXV.

It shall be the duty of a special jury to decide concerning the admission of works of art.

ARTICLE XXVI.

The requirements to be fulfilled for applications for admission shall be fixed by subsequent regulations. Another regulation shall also indicate the method of shipment and of reception of works of art.

ARTICLE XXVII.

Decision shall be given hereafter with regard to the number and nature of the premiums to be awarded, and also concerning the appointment of an international jury for the award of premiums.

SPECIAL PROVISIONS RELATING TO INDUSTRIAL AND AGRICULTURAL PRODUCTIONS.

ARTICLE XXVIII.

All manufactured and agricultural productions shall be admissible to the exhibition, with the exceptions and reservations mentioned in the following article:

ARTICLE XXIX.

Detonating and fulminating articles and, in general, all matters regarded as dangerous, shall be excluded.

Spirits or alcohols, oils and essences, corrosive substances, and in general any articles that may injure other productions with which they may come in contact, or that may incommode the public, shall not be received otherwise than in solid vessels suitable for containing them, and of small dimensions.

Percussion caps, fire-works, chemical matches, and other similar objects shall not be received. Imitations thereof, may, however, be received, provided that they contain no inflammable matter.

ARTICLE XXX.

Exhibitors of injurious productions or those calculated to impair the health of human beings must, at all times, conform to such precautionary measures as may be prescribed.

ARTICLE XXXI.

The director-general of the management may at all times cause the removal of all articles, no matter what may be their origin, which, owing to their nature and their appearances, may appear to be objectionable or incompatible with the object or the decorum of the exhibition.

ARTICLE XXXII.

French applications for admission must be drawn up according to the form appended to these regulations. (Annex No. 4.)

Applications from Paris and the department of the Seine are to be sent directly to the minister of commerce and manufactures, commissioner-general, No. 35 Quai d'Orsay, Paris, or to the director-general of the management, No. 80 rue de Varenne.

Those from the departments are to be received by the departmental committees, who will forward them to the same addresses.

All applications of French citizens, thus centralized, shall be submitted by classes to the examination of committees on admission, appointed by the minister, and from whose decisions there shall be no appeal. It is essential that all applications be handed in as speedily as possible.

The printed blank forms of applications for admission shall be furnished to the public gratuitously, at the following places:

(1) At Paris: At the ministry of commerce and manufactures, No. 25 Quai d'Orsay, and No. 244 boulevard Saint Germaine; at the buildings of the management of the exhibition (avenue de La Bourdonnaye and rue de Varenne, No. 80); at the tribunal, and at the chamber of commerce.

(2) In the departments: At the prefectures, subprefectures, chambers of commerce, tribunals of commerce, advisory chambers of arts and manufactures, and at the locations of the departmental committees, as well as at such places of distribution as may be designated by the said committees.

ARTICLE XXXIII.

Constructors of apparatus requiring the use of water, gas, or steam must state, either at the time of making their application for admission or through the foreign delegates, the quantity of water, gas, or steam that they require.

Those desiring to set machinery in motion shall state the exact velocity of such machinery and the motive power which it will require.

ARTICLE XXXIV.

Water, gas, steam, and motive power for the machinery galleries shall be furnished gratuitously.

The power shall be taken from the vehicle of general transmission.

The establishment of all intermediate transmissions shall be at the cost of exhibitors.

PROVISIONS RELATIVE TO MANAGEMENT.

ARTICLE XXXV.

Articles shall be exhibited in the name of the signer of the application for admission. From this requirement there shall be no deviation.

ARTICLE XXXVI.

Exhibitors are authorized to enter, after their own names or the names of their firms, the names of such co-operators of all kinds and all grades as have contributed to the utility of the articles exhibited.

ARTICLE XXXVII.

Exhibitors are expressly requested to state the market price of the articles exhibited, both for the purpose of facilitating the labor of the jury and of edifying visitors.

ARTICLE XXXVIII.

Articles sold shall not be removed before the close of the exhibition, unless by special authorization.

ARTICLE XXXIX.

The State shall take measures to protect articles exhibited from all injury, but it will in nowise be responsible for any accidents, or for fire, or for any damage that they may suffer, be the cause thereof what it may. Exhibitors shall be at liberty to insure their goods directly, at their own expense, if they shall think proper to do so.

ARTICLE XL.

A general surveillance shall be established in order to protect goods from theft and embezzlement.

Foreign commissions shall have full control as regards the custody of their respective sections. The officers designated by them for the performance of this duty shall be commissioned by the commissioner-general. They shall wear a uniform or a distinctive badge; they may, under all circumstances, apply for assistance to the French officers and policeman who shall walk through the passages open to the public, or who shall be stationed there.

In the French section, the exhibitors of each class shall make arrangements for the organization of a collective system of guardianship, independent of the general surveillance. The special officers of this class shall be commissioned by the minister commissioner-general; they shall wear badges indicating the number of the class whose rooms they are to watch.

ARTICLE XLI.

It is expressly understood that the State disclaims all responsibility for any thefts and embezzlements that may be committed.

ARTICLE XLII.

No article shall be advertised by means of hand-bills, prospectuses, etc., within the exhibition, by exhibitors, holders of concessions, or any other person, without regular authorization and prepayment of such fees as may be required.

ARTICLE XLIII.

All communications relative to the exhibition must be addressed to the Minister of Commerce and Manufactures, Commissioner-General, No. 25 Quai d'Orsay, Paris, and must bear on the envelope the words "World's Exhibition of 1889." (Exposition universelle de 1889.)

ARTICLE XLIV.

Both French citizens and foreigners, by becoming exhibitors, declare by that very fact, that they adhere to the provisions contained in Articles XI–XLII of these regulations.

EDOUARD LOCKROY,
Minister of Commerce and Manufactures, Commissioner-General.

PARIS, *August* 26, 1886.

[Annex No. 1.]

SYSTEM OF GENERAL CLASSIFICATION.

FIRST GROUP.

WORKS OF ART.

CLASS 1.—*Oil paintings.*

Paintings on canvas, panels, and on various preparations.

CLASS 2.—*Paintings of different kinds, and drawings.*

Miniatures; paintings in water-colors; pastel, and drawings of all kinds; paintings on enamel, china, and porcelain; cartoons for windows and frescoes.

CLASS 3.—*Sculpture, and engraving on medals.*

Sculpture in full relief, bas-relief, punctured and chiseled sculpture. Medals, cameos and engraved stones. Inlaid enamel work.

CLASS 4.—*Drawings and models for buildings.*

Studies and fragments. Representations and plans of buildings. Restorations from ruins or documents.

CLASS 5.—*Engraving and lithographing.*

Engravings in black; polychromatic engravings. Lithographs in black, in crayon, and in pencil; chromo-lithography.

SECOND GROUP.

EDUCATION AND INSTRUCTION.—MATERIALS AND PROCESSES USED IN THE LIBERAL ARTS.

CLASS 6.—*Education of very young children.—Primary instruction.—Instruction of adults.*

Plans and models of infant asylums, schools for mothers, orphan asylums, rooms and gardens for the care of children; arrangement and furniture of such establishments. Materials for instruction calculated to promote the physical, moral, and intellectual development of a child until the age when it is proper for him to enter school.

Plans and models of city and country school-buildings; arrangements and furniture of such buildings. School articles, books, maps, apparatus, models, etc.

Plans and models of schools for adults and for industrial training. Arrangement and instruction in such establishments. Articles used in the instruction of adults and in industrial training. Articles used in elementary instruction in its various branches. Articles for elementary instruction in geometrical and landscape drawing.

Articles for the instruction of the blind, and of the deaf and dumb.

Articles made by pupils of both sexes.

Books and publications.

CLASS 7.—*Organization of secondary instruction and articles used therein.*

Plans and models of establishments for secondary instruction; lyceums for boys and girls, gymnasiums, colleges, and industrial and commercial schools. Arrangement and furniture of such establishments.

Collections, standard books, maps, and globes; articles used in technological and scientific instruction, for instruction in the arts, and in drawing, music, and singing.

Apparatus and methods used in teaching gymnastics, fencing, and military exercise.

CLASS 8.—*Organization and methods of superior instruction and articles used therein.*

Plans and models of academies, universities, medical and practical schools, technical schools, and those for application, agricultural schools, observatories, scientific museums, amphitheaters, and laboratories for instruction and experiment.

Furniture and arrangement of such establishments.
Apparatus, collections, and materials used in superior education and in scientific research.
Special exhibitions of learned, technical, agricultural, commercial, and industrial institutions and societies.
Scientific expeditions.

CLASS 9.—*Printing and book-selling.*

Specimens of typography, autographic proofs, lithographic proofs in black and colors; proofs of engravings.
New books, and new editions of books already known; collections of works forming special libraries; periodicals. Drawings, atlases, and albums.

CLASS 10.—*Stationery, book-binding, and articles used in painting and drawing.*

Paper, cards, and card-boards; ink, chalk, crayons, pastels, desk furniture, articles used in offices, inkstands, letter-scales, etc., and copying-presses.
Articles made of paper, such as shades, lanterns, flower-pot screens, etc.
Record-books, copy-books, albums, and note-books; bindings, movable bindings, cases, etc.
Various articles for washes and water-colors; paints in cakes, in pastels, in bladders, tubes, and shells.
Instruments and apparatus for the use of painters, designers, and modelers.

CLASS 11.—*Ordinary application of the arts of designing and modeling.*

Industrial designs; designs obtained, reproduced or reduced by mechanical process. Decorative paintings, lithographs, chromo-lithographs, or engravings to be used in manufactures. Models for figures, ornaments, etc.
Molded, stamped, chiseled, and carved articles. Cameos, seals, and various articles decorated by means of engraving. Industrial decorative plastic goods made by mechanical process; reductions, etc.

CLASS 12.—*Photographic proofs and apparatus.*

Photographs on paper, glass, wood, cloth, enamel, etc. Heliographic engravings, lithographic proofs, litho-photographic proofs, photographic *clichés*, stereoscopic proofs and stereoscopes. Proofs obtained by amplification. Photochromy.
Instruments, apparatus, and raw material used in photography. Articles used by photographers.

CLASS 13.—*Musical instruments.*

Non-metallic wind instruments, with single mouth-piece, with *bec de sifflet*, with reeds, with or without air reservoirs.
Metallic wind instruments, single, with extensions, with slides, with pistons, with keys, and with reeds.
Wind instruments with keys: organs, accordions, etc.
Stringed instruments played with the fingers or with a bow, without keys.
Stringed instruments with keys: pianos, etc.
Pulsatile instruments, or those played by means of friction. Automatic instruments: hand-organs and bird-organs.
Detached pieces and articles used in orchestras.

CLASS 14.—*Medicine and surgery—Veterinary and comparative medicine.*

Articles, instruments, and apparatus used in anatomical, histological, and bacteriological work.
Normal and pathological anatomical specimens; histological and bacterioscopical preparations.
Instruments for medical examinations, both general and special.
Apparatus and instruments used in general, local, and special surgery.
Apparatus used for dressing wounds.
Apparatus used in plastic and mechanical prothesis; orthopedic apparatus; apparatus used in hernial surgery; balneatory and hydrotherapeutical apparatus; apparatus used in medical gymnastics; articles, instruments, and apparatus used in special therapeutics.

Articles used in dental surgery.
Miscellaneous articles for the use of the infirm, the sick, and the insane.
Accessory articles used in the medical, surgical and pharmaceutical service of hospitals or infirmaries.
Cases for instruments and medicines for the use of army and navy surgeons. Articles for use in succoring the wounded on battle-fields.
Appliances for resuscitating the drowned and the asphyxiated.
Special articles, instruments, and appliances used by veterinary surgeons.

CLASS 15.—*Philosophical instruments.*

Philosophical apparatus and instruments.
Apparatus and instruments used in practical geometry, surveying, topography, and geodesy; compasses; calculating machines; levels; mariners' compasses, barometers, etc.
Measuring apparatus and instruments; verniers, micrometric screws, dividing machines, etc., and philosophical balances.
Instruments used in ordinary optics. Astronomical instruments. Physical and meteorological instruments, etc. Instruments and apparatus for laboratories and observatories.
Measures and weights of different countries. Coins and medals.

CLASS 16.—*Geographical and cosmographical maps and apparatus—Topography—Models, plans, and designs for civil engineering and public works.*

Geographical, geological, hydrographic, and astronomical maps and atlases.
Physical maps of all kinds. Plain or raised topographical maps.
Terrestrial and celestial globes and spheres. Statistical works and tables. Tables and ephemerides for the use of astronomers and navigators.
Models, plans, and designs for public works, such as bridges, viaducts, aqueducts, drains, canal-bridges, locks, dams, etc.
Models, plans, and designs for public buildings to be used for special purposes; municipal buildings, hotels, and tenement houses; houses for the occupancy of the working-classes.
Models, plans, and designs for stations, car-houses, and sundry buildings required by railways.

THIRD GROUP.

FURNITURE, ETC.

CLASS 17.—*Cheap and fancy furniture.*

Buffets, book-cases, tables, toilet-tables, beds, sofas, chairs, billiard-tables, etc.

CLASS 18.—*Tapestry and decorative work.*

Cushions, upholstered chairs, canopies, curtains, hangings, and tapestry.
Decorative articles and furniture. Molded pulp, and decorative articles of plaster, statuary pasteboard, papier-mâché, etc. Frames. Paintings and decorations for churches.

CLASS 19.—*Glass articles and window-glass.*

Vases and goblets; carved, double, and mounted crystals, etc. Ordinary vases and goblets. Common glass-ware and bottles. Glass for windows and mirrors. Highly finished, enameled, filigreed, and tempered glass, etc.
Glasses for optical purposes; articles for ornament, etc. Stained glass for windows. Mirrors, looking-glasses, etc.

CLASS 20.—*Ceramics.*

Semi-vitrified porcelain, hard and brittle porcelain. Fine painted china, etc. Semi-vitrified china. Baked clay. Enameled lava. Bricks and squares. Ceramic stones.

CLASS 21.—*Carpets, tapestry, and other fabrics used in house-furnishing.*

Carpets, moquettes, and tapestry, velvety or with flock surface. Carpets of felt, mats, etc. India-rubber carpets, etc.
Fabrics used in furnishing, such as cotton, wool, or silk, plain or figured. Fabrics of horse-hair, vegetable leather, mole-skin, etc. Leather used for hangings and furniture. Oil-cloths and linoleums.

CLASS 22.—*Decorated paper.*

Printed paper. Paper with velvety surface, marbled, grained paper, etc. Paper for book-binders' boards, binding, etc. Artistic papers. Enameled and varnished paper. Imitations of wood and leather. Painted or printed blinds.

CLASS 23.—*Cutlery.*

Knives, penknives, scissors, razors, etc. Various articles of cutlery.

CLASS 24.—*Silverware.*

Silverware for use in churches; decorative and table silver; articles of silver for the toilet, for office use, etc.

CLASS 25.—*Bronzes, cast-iron articles used in the arts, repoussé work in metals.*

Statues and bas-reliefs in bronze, cast-iron, zinc, etc. Cast metals with metallic coatings.

Repoussé work in copper, lead, zinc, etc.

CLASS 26.—*Watches and clocks.*

Detached pieces, both large and small, used in the manufacture of clocks and watches.

Watches, chronometers, pedometers, sundry reckoners, etc. Mantel and other clocks; regulators and metronomes.

Astronomical clocks, chronometers for the Navy; traveling clocks. Alarm clocks, etc. Water clocks and hour-glasses.

CLASS 27.—*Apparatus and processes used in warming buildings—Apparatus and processes used for lighting otherwise than by electricity.*

Hearths, fire-places, stoves, and furnaces. Accessory appliances for heating houses. Stoves and apparatus for heating and cooking with gas.

Apparatus for heating by means of hot water, steam, and hot air.

Lamps for lighting by means of sundry oils and essences.

Accessory articles for lighting. Matches. Accessory appliances and apparatus for lighting by gas. Apparatus for lighting by means of magnesium, etc.

CLASS 28.—*Perfumery.*

Cosmetics and pomatums; perfume oils, extracts, and scented waters; aromatic vinegar; almond paste, powders, pastilles and perfume sachets; perfumes for burning toilet soaps.

CLASS 29.—*Morocco goods, toys, baskets, and brushes.*

Work-boxes and small fancy articles of furniture; liqueur-cases and glove-cases. Fancy boxes.

Cases and bags, jewel-boxes. Porte-monnaies, pocket-books, note-books, and cigar-cases.

Turned, machine-turned, carved, and engraved articles of ivory, shell, etc. Pipes and tobacco-boxes.

Fancy combs; fine toilet brushes.

Miscellaneous lacquer articles.

Fancy baskets; *clissages* and fine esparto goods.

Coarse brushes and feather dusters.

Paint-brushes.

FOURTH GROUP.

FABRICS, WEARING APPAREL, ETC.

CLASS 30.—*Thread and cotton fabrics.*

Prepared and spun cotton.

Fabrics of pure cotton, plain or figured.

Fabrics of mixed cotton.

Cotton velvet.

Cotton ribbons.

Carded wool; threads of carded wool.
Cloths and other fabrics of carded wool.
Blankets.
Felt of wool or hair, for carpets and hats.
Socks.
Fabrics of carded wool, unfulled or slightly fulled; such as flannels, tartans, swan skins, etc.

CLASS 33.—*Silks and silk fabrics.*

Raw and thrown silks; threads of floss silk.
Fabrics of pure silk, plain, highly finished, figured.
Fabrics of silk mixed with gold, silver, cotton, wool, thread, etc.
Fabrics of floss silk, pure or mixed.
Velvets and plushes.
Ribbons of pure or mixed silk.
Shawls of pure or mixed silk.

CLASS 34.—*Laces, tulles, embroidery, and lace work.*

Laces of thread or cotton, made with the spindle, the needle, or by mechanical process.
Laces of silk, wool, or goats' hair.
Silver or gold lace.
Silk or cotton tulle, plain or figured.
Embroidery in tambour-work, crocheting, etc.
Embroidery in gold, silver, and silk.
Sacerdotal vestments.
Embroidery, tapestry, and other hand work.
Laces of silk, floss silk, wool, goats' hair, sundry kinds of hair, horse hair, thread, and cotton; braids, etc.
Fine and imitation lace work. Special lace work for military equipments.

CLASS 35.—*Articles of hosiery and underclothing—Other articles of wearing apparel.*

Hosiery of cotton, thread, wool, or silk cashmere, or of floss-silk, pure or mixed Elastic fabrics; knit goods. Gentlemen's, ladies', and children's furnishings; baby linen. Flannel goods and other woolen fabrics. Corsets, cravats, gloves, gaiters garters, suspenders, fans, screens, umbrellas, parasols, canes, etc.

CLASS 36.—*Wearing apparel for both sexes.*

Men's clothing, women's clothing.
Hats and head-gear for both sexes; artificial flowers and feathers

CLASS 38.—*Portable arms—Hunting.*

Defensive weapons: Cuirasses, helmets.
Blunt weapons: Clubs, bludgeons, etc.
Side-arms: Swords, sabers, bayonets, spears, axes, and hunting knives.
Missile weapons: Bows, cross-bows, etc.
Fire-arms: Guns, carbines, pistols, revolvers.
Other articles made by gunsmiths. Filled or hollow projectiles, explosives. Caps, priming tubes, cartridges.
Hunting equipments; instruments used in training dogs.
Articles used in fencing.

CLASS 39.—*Articles for traveling and camping out.*

Trunks, valises, saddle-bags, etc. Traveling cases. Miscellaneous articles. Traveling rugs; cushions; head-gear; water-proof garments; iron-bound staffs; grapnels; parasols.
Portable articles specially designed for travelers and persons going on scientific expeditions; cases and baggage for the use of geologists, mineralogists, naturalists, settlers, pioneers, etc.
Tents and articles for use in camp, such as beds, hammocks, seats, folding-chairs, etc.

CLASS 40.—*Toys.*

Dolls and toys; also wax figures.
Games intended for the amusement of children or adults.
Instructive and scientific toys.

FIFTH GROUP.

EXTRACTIVE ARTS, RAW AND MANUFACTURED PRODUCTS.

CLASS 41.—*Products of mining and metalurigy.*

Collections and specimens of rocks, minerals and ores; ornamental rocks; hard rocks; refractory substances; earths and clays; various mineral products; raw sulphur; rock salt, salt from salt springs; mineral fuel, various coals, residua, and agglomerates; asphalts and asphaltic rocks; bitumen, coal-tar, unrefined petroleum, etc.
Unwrought metals: Smeltings, iron, steel, iron in process of conversion to steel, copper, lead; silver, zinc, etc.; metallic alloys.
Products of the art of the leacher of ashes, and of the refiner of precious metals, of the gold-beater, etc.
Products of the manufacture of unwrought metals: Castings, bells, commercial iron (pig-iron); special kinds of iron; sheet-iron and tin; sheet-iron for sheeting and building purposes, etc.
Sheet-iron coated with zinc and coated with lead, etc.; copper, lead, and zinc sheets, etc.
Wrought metals: Forge-work and large iron-work; wheels and tires; unsoldered tubes, chains, etc.
Products of wire-drawing: Needles, pins, metallic cables, lattices, wire gauzes, punched sheets.
Hardware, edge-tools, manufactures of iron, of copper, of sheet-iron, iron-ware, and tin-ware.
Various wrought metals.

CLASS 42.—*Products of forest growth and forest industries.*

Specimens of forest species.
Wood for ornamental work, fuel, and building purposes. Wood prepared for naval purposes, clapboards, split wood.
Cork; textile barks. Substances for tanning, dyeing, scenting, and resinous substances, etc.
Products of forest industries: Woods dried by fire and charcoals; potash in the raw state; articles manufactured by the cooper, the basket-maker, manufactures of esparto, wooden shoes, etc.

CLASS 43.—*Products of the chase—Products of the fisheries, apparatus and instruments for fishing, and for gathering fruits of natural growth; products of the latter.*

Collections and drawings of amphibious animals, birds, eggs, fishes, cetacea, mollusks, and crustacea.

Products of the chase: Furs and skins, hair, horse-hair, feathers, down, horns, teeth, ivory, bones, shells, musk, castoreum, and similar products.

Products of the fisheries: Whale-oil, spermaceti, etc.; whalebone, amber-gris, mollusk-shells, pearls, mother-of-pearl, sepia, purple, corals, sponges, etc.

Products of fruit growth or of crops obtained without cultivation: Mushrooms, truffles, wild fruits, lichens used in dyeing, for food or forage; fermented saps; quinquinas; useful barks and filaments, wax, gum-resins, caoutchouc in the raw state, gutta-percha, etc.

Snares and apparatus: Lines and hooks, harpoons, nets, apparatus and bait for fishing.

Apparatus and instruments for harvesting products obtained without cultivation.

CLASS 44.—*Agricultural products not used for food.*

Textile substances: Raw cotton, flax and hemp, dressed and undressed; textile vegetable fibers of every kind; wool in the raw state, washed and unwashed; silk-worm cocoons.

Various agricultural products employed in industry, in pharmacy, and in domestic economy; oleaginous plants, oils, wax, resins.

Leaf or manufactured tobacco. Touch-wood.

Tanning and dyeing substances.

Stored forage and substances specially intended for feeding animals.

CLASS 45.—*Chemical and pharmaceutical products.*

Acids, alkalis, salts of all kinds, sea salts, and products resulting from the treatment of mother-waters.

Various products of the chemical industries; wax and fat bodies; soaps and candles; elementary bodies of perfumery; resins, tar and derived bodies; essences and varnishes; various glazes; blacking.

Elementary bodies of pharmacy; simple and compound medicines.

Products of the caoutchouc and gutta-percha industries; dyeing substances and colors.

Products derived from the treatment of mineral matters utilized for light.

CLASS 46.—*Chemical methods of bleaching, dyeing, printing, and finishing.*

Specimens of threads and stuffs bleached and dyed. Samples of dyeing preparations.

Specimens of printed or dyed cloths, of cotton prints, pure or mixed. Specimens of woolen prints, pure or mixed, combed or carded.

Specimens of silk prints, pure or mixed.

Specimens of printed felt or cloth carpet; of oil-cloths.

CLASS 47.—*Leathers and skins.*

Elementary substances employed in the preparation of skins and leather.

Green skins, salted skins, tanned leather, curried leather, pressed leather, or dyed leather; varnished leather.

Morocco and sheep-skins; Hungary-dressed skins; shamoy-dressed skins; tawed skins; dressed or dyed skins; skins prepared for gloves; peltry and furs, dressed or dyed; parchments.

Articles of gut work: Cords for musical instruments; gold-beater's skins; ligaments of the ox, etc.

SIXTH GROUP.

APPARATUS AND METHODS OF THE MECHANICAL INDUSTRIES—ELECTRICITY.

CLASS 48.—*Apparatus and methods of working mines and of metallurgy.*

Apparatus for search borings for artesian wells, and for wells in long tubular sections.

Models, plans, and sketches of the working of mines and quarries.

Methods of utilizing the flow of mineral waters.

Machines and apparatus intended for lifting—for carrying down and bringing up the workmen from the mine.

Machines for drainage; pumps.
Machinery for pumping in air; ventilators.
Safety lamps; safety apparatus; parachutes; signals.
Apparatus for the mechanical preparation of ores and mineral fuel.
Apparatus for compressing fuel.
Apparatus for carbonizing fuel; furnaces and metallurgic blasts; smoke-consuming apparatus.
Plant of metallurgical shops.
Special plant of forges and foundries.
Plant of shops for working up the metals under all forms.

CLASS 49.—*Apparatus and methods of farming and forestry.*

Plans for the cultivation, distribution, and management of crops.
Plant and works of agricultural engineering: Surface drainage, subsoil drainage, irrigation.
Plans and models of agricultural buildings.
Tools, instruments, machines, and apparatus serving for plowing nd other dressings given to the ground for sowing and planting, harvesting, preparing, and preserving the products of cultivation.
Various agricultural machines moved by teams or steam.
Plant for carts and agricultural conveyances.
Movable steam-engines for special purposes and horse-gins.
Fertilizers of organic or mineral origin.
Apparatus for the physical and chemical study of soils.
Plans of methods of replanting, managing, and cultivating forests.
Plant for forest work and forest industries.
Plant, instruments, and machines for the manufacture of tobacco.

CLASS 50.—*Plant and methods of agricultural manufactories and food industries.*

Plant for agricultural manufactories; manufactories of artificial fertilizers, of drainage pipes; cheese-factories, dairies, flour-mills, farina-mills; starch-mills, oil-mills, breweries, distilleries, sugar-mills, refineries, mills for the manufacture of textile substances, silk-worm nurseries, etc.
Plant for the manufacture of food products: bread-beaters and mechanical ovens for bakers; pastry and confectionery utensils.
Apparatus for the manufacture of doughs for food, sea-biscuit, etc.; machines for making chocolate; apparatus for drying coffee.
Preparation of ices and sherbets; manufacture and keeping of ice.

CLASS 51.—*Plant of the chemical arts, pharmacy and tanning.*

Laboratory utensils and apparatus; enameling lamps; blow-pipes.
Apparatus and instruments designed for industrial and commercial experiments.
Plant and apparatus of the manufactories of chemical products; soaps and candles.
Plant and methods of the manufacture of essences, varnishes, articles of caoutchouc and gutta-percha.
Plant of factories using the mineral substances useful for light.
Plant and methods of bleaching factories.
Plant for the preparation of pharmaceutical products.
Plant of factories for tanning and tawing leather.
Plant and methods of glass factories and manufactories of ceramic products.

CLASS 52.—*Machines and apparatus of general mechanics.*

Detached pieces of machinery: Supports, rubble-stones, sliding-rods, eccentrics, gearing, coupling-rods, parallelograms and joints, pulleys, belts, funicular systems, etc; couplings, monkeys, etc; regulators and moderators of motion; apparatus for greasing.
Indicators and registers; dynamometers, manometers, weighing apparatus; gauging apparatus for liquids and gases.
Machines used for handling heavy masses.
Hydraulic lifting machines: Norias, pumps, tympanums, hydraulic rams, etc.
Hydraulic receivers: Wheels, turbines, water-pressure engines.
Hydraulic presses.
Engines moved by steam: Stationary engines, stationary and movable engines, movable engines, boilers, steam-generators, and accessory apparatus.
Apparatus for condensing vapors.

Engines moved by other vapors than steam; by combined vapors.
Gas, hot-air, and compressed-air engines.
Apparatus for the transmission of force by water and by air.
Wind-mills and *pananémones* (wind vanes?).
Balloons.

CLASS 53.—*Machine tools.*

Machine tools used for working up wood: Planes, *toupies* (molding cones? turning lathes?); circular and belt saws; mortise cutters, etc.; machines for making casks; machines for cutting cork.

Turning-lathes and fine boring and planing machines; mortise-cutting machines, piercing machines, cutting presses, circular-saw cutting machines (?) (*machines à fraiser*), machines for cutting out curves (?) (*machines à décolleter*), punching machines, screw-cutting machines, riveting machines, etc.; drills; various tools of shops of mechanical construction.

Stones for whetting, scraping, polishing, etc.

Tools, machines, and apparatus used for pressing, crushing, kneading, sawing, polishing, etc. Special machine-tools in the various industries.

CLASS 54.—*Plant and methods of rope-spinning.*

Plant of hand-spinning. Detached pieces belonging to the plant of spinning-mills. Machines and apparatus used in the preparation and spinning of textile substances. Apparatus and methods used in the operations complementary to these: drawing, dividing, twisting throwing; mechanical preparations. Apparatus for drying and determining the thickness and length of the threads.

Plant of rope-spinning mills, round cables, flat cables, *cables diminués* (short cables?), ropes, strings, wire cables, cables with a metal core, fuses, quick matches, etc.

CLASS 55.—*Apparatus and methods of weaving.*

Machines for warping, winding. Stretching-machines. Ordinary and mechanical frames for the manufacture of close tissues. Frames for the manufacture of figured and embroidered stuffs; damask looms.

Frames for manufacturing carpets and tâpestries.

Frames with meshes for the manufacture of hosiery and tulles. Plant for the manufacture of lace. Plant of lace-work factories.

High-warp tapestry frames, and methods of figuring by means of pirns (?) (*espoulinage*). Accessory apparatus: machines for fulling, mangling, diapering, watering, measuring, folding, etc.

CLASS 56.—*Plant and methods of sewing and making articles of clothing.*

Ordinary tools of sewing and finishing shops. Machines for sewing, stitching, seaming, and embroidering.

Saws for cutting stuffs and leathers for the manufacture of articles of clothing and boots.

Machines for making, pegging, and screwing shoes.

Machines for utilizing caoutchouc.

CLASS 57.—*Plant and methods of manufacture of articles of furniture and of building material.*

Machine for cutting up wood for veneering. Saws for cutting up and profile cutting, etc.

Machines for making moldings, borders for frames, floor-plates, furniture, etc. Turning-lathes and different apparatus of the joiner's and cabinet-maker's shops.

Machines for stamping and chasing, machines and apparatus for working in stucco, pasteboard, ivory, bone, horn, etc.

Machines for bringing to a point (*à mettre au point*), sculpturing, chiseling down statues, engraving, engraving in waved lines, etc.

Brick machines, tile machines. Machines for making artificial stones.

Machines for sawing and polishing hard stones, marbles, etc.

CLASS 58.—*Plant and methods of paper manufacture, dyeing and printing.*

Plant and products of the manufacture of paper pulp of wood, straw, alfa, etc.

Methods and products of the bleaching of ligneous fiber.

Plant of the manufacture of paper by the vat and by machine.
Apparatus for satining, glazing, watering, diapering, filigreeing, and ruling paper.
Machines for cutting up, cutting and stamping paper, etc.
Plant for bleaching, coloring, and finishing paper and tissues.
Plant for printing paper-hangings and tissues.
Machines for engraving the printing rollers.
Plant, apparatus, and products of foundries for types, stereotype plates, etc.
Machines and apparatus employed in printing, stereotyping, engraving, autography, lithography, engraving on copper, engraving on zinc, chromo-lithography, etc.
Machines for setting up and sorting type.
Printing of bank-notes, stamps, etc.

CLASS 59.—*Machines, instruments, and methods used in various occupations.*

Coining-presses; machines used in the manufacture of buttons, pens, pins, letter-envelopes; machines for packing, making brushes and cards; manufacturing capsules; leading goods; corking bottles, etc.
Tools and methods of manufacture of articles of clock-work, toys, mosaic-work, basket-work, etc.
Machines for binding; writing-machines.

CLASS 60.—*Carriage and wagon making, harness-making, and saddlery.*

Detached pieces of wagon and carriage manufacture; wheels, tires, axles, wheel-boxes, iron work, etc. Springs, and various systems of suspension.
Methods of harnessing; bits.
Products of the wagon-building industry: Wagons, carts, drays, vehicles destined for special purposes.
Products of carriage-building: Carriages for hire, state carriages, private carriages, sedan-chairs, litters, sledges, etc., velocipedes.
Articles of harness and saddlery; pack-saddles, saddles, stretchers for conveying the wounded on the backs of mules; bridles and harness for riding-animals; beasts of burden and draught; stirrups, spurs, whips, and riding-whips.

CLASS 61.—*Plant for railroads.*

Detached pieces: Springs, buffers, brakes, etc.
Fixed plant: Rails, chairs, fish-plates, side-tanks, switches, turn-tables; rubber buffers; cranes for supplying fuel and water-tanks; optical and acoustic signals. Various kinds of safety apparatus, of blocking trains.
Fixed plant for tramways.
Rolling-stock: Passenger-cars, construction-cars, freight-cars, cattle-cars, locomotives, tenders.
Self-movable carriages and road engines.
Special machines and tools for shops of maintenance and repair and the construction of plant.
Plant and machines for inclined planes and self-movable planes; models of machines of systems of traction, of apparatus relating to railways.
Rolling-stock for tramways of various kinds.

CLASS 62.—*Electricity.*

Production of electricity: Static electricity, piles and accessories, magneto-electrical and dynamo-electrical machines, accumulators.
Transmission of electricity: Cables, wires, and accessories; lightning-rods.
Electrometry: Apparatus serving for electrical gauges. Registers of electricity.
Applications of electricity: Telegraphy, signals, telephony, microphony, photophony, electric light, electric motors, electrical locomotion, conveyance and distribution of force transmuters. Medical electricty, electro-chemistry. Electro-magnets and magnets, compasses. Electrical clock-work.
Various kinds of apparatus.

CLASS 63.—*Plant and methods of civil engineering of public works and architecture.*

Building materials: Rocks, woods, metals, ornamental stones; limestone, mortars, cements, artificial stones and concretes; draining tiles, bricks, paving-tiles; slates, roofing-paper and felts for roofs.
Plant and products of the methods employed for the preservation of wood. Apparatus and instruments for testing building materal.

Plant for earthworks; excavators. Apparatus for construction-shops. Tools and methods of the trimmer, of the cutter of stones, of the mason, carpenter, roofer, locksmith, joiner, glazier, plumber, painter of buildings, etc.

Fine lock-smith's work: Locks, padlocks, gratings, balconies, balustrades, etc.

Plant and engines for building foundations: Pile-drivers, piles, screw-piles, pumps, pneumatic apparatus, dredges, etc.

Plant for hydraulic works in sea-ports, canals, rivers.

Plant and apparatus serving for the distribution of water and gas. Plant for maintaining roads, plantations, walks.

Light-houses.

Special plant for telegraphing by compressed air.

CLASS 64.—*Hygiene and public works.*

Plant instruments and apparatus used in hygiene investigations.

Plant and methods for rendering salubrious private houses, buildings, and cities; methods of renewing the air directly; warming, ventilating, lighting in their relation with health; methods of carrying off water and sewerage by gutters, drains, and sewers; receiving reservoirs, hydraulic siphons, water-closets, public and private urinals, sinks, close-stools, night-soil apparatus, sanitary plumbing, walls, bricks, roofs flooring, etc.

Apparatus for carrying off, receiving, and treating sewerage.

Apparatus and methods for filtering water.

Apparatus intended for the prevention of infectious diseases; methods, products, and instruments for purifying, destroying germs, and disinfecting.

Apparatus and instruments for interring and destroying dead bodies in cemeteries and on battle-fields; cremation.

Plans, models, and documents of health offices, national, departmental, and communal.

Plant and methods of industrial and professional hygiene.

Plans, models, arrangement, and furniture of hospitals, various asylums, houses of refuge, of retreats, insane asylums, infant asylums, etc.

Plans, models, specimens of civil and military ambulances.

Mineral waters and waters charged with natural or artificial gases.

CLASS 65.—*Plant of navigation and life-saving.*

Drawings and models of stocks, refitting-basins, floating docks, etc.

Drawings and models of buildings of all kinds used for river and maritime navigation. Plans and models of systems of construction adopted in the merchant and war services, torpedo-boats, ship's boats, and small craft.

Plant of ship's rigging; cranes, capstans. *Vireurs* (steam-capstans?) steering-gear.

Equipment.

Flags and signals. Apparatus intended to prevent collisions at sea; buoys, beacons, etc.

Instruments and methods of swimming, diving, and life-saving; life-preservers, swimming-belts, etc.; diving-bells, nautiluses, diving-armor, etc.; submarine-boats, instruments for the martime life-saving service; mortars for casting lines; life-boats, etc.; instruments for life-saving in case or fire and other accidents.

Pleasure-boats.

CLASS 66.—*Instruments and methods of the art of war.*

Works of military engineering; fortifications.

Artillery, arms, gun-carriages, and projectiles of all kinds.

Equipment, clothing material, and material for camps.

Plant used for military transport.

Military topography and geography.

SEVENTH GROUP.

FOOD PRODUCTS.

CLASS 67.—*Cereals. Farinaceous products with their derivatives.*

Wheat, rye, barley, rice, maize, millet, and other cereals in the grain, and when ground.

Hulled grain and oatmeal.

Potato starch, rice starch, lentil starch, etc., gluten.

Tapioca, sago, arrow-root, various starches, mixed farinaceous products.
Italian paste, semolino, vermicelli. maccaroni.
Preparations of food intended to take the place of bread, noules (pastry), pap, pastry of domestic make.

CLASS 68.—*Products of the bakery and pastry shop.*

Various kinds of bread, leavened and unleavened; fancy breads and *pains façonnés* (bread worked into figures?); pressed bread, for traveling, military campaigns, etc.; sea-biscuit.
Different products of pastry belonging to each country. Spice-bread and dry cakes fit for keeping.

CLASS 69.—*Fat bodies used for food, milk products, and eggs.*

Fats and oils for food.
Fresh milk, condensed milk; salt and fresh butter; cheeses.
Eggs of all kinds.

CLASS 70.—*Meats and fishes.*

Salt meats of every kind. Meats preserved by various processes. Meat and soup tablets. Hams and preparations of meat.
Poultry and game.
Salt fish, packed fish, codfish, herrings, etc.; fish cured in oil; sardines, pickled mackerel, etc.
Crustacea and shell-fish: Lobsters, shrimps, oysters; pickled oysters, anchovies, etc.

CLASS 71.—*Vegetables and fruits.*

Roots, potatoes, etc.
Dry farinaceous vegetables: Beans, lentils, etc.
Green vegetables for boiling: Cabbage, etc.
Vegetable roots: Carrots, turnips, etc.
Spice vegetables: Onions, garlic, etc.
Salads, cucurbitaceous plants, pumpkins, melons, etc.
Vegetables preserved by various processes.
Fruits in the fresh state; fruits dried and prepared; prunes, figs, raisins, etc.
Fruits preserved without the aid of sugar.

CLASS 72.—*Condiments and stimulants; sugars and products of confectionery.*

Spice: Pepper, cinnamon, allspice, etc.
Table salt.
Vinegar.
Condiments and compounded stimulants: Mustard, karis, sauces, etc.
Teas, coffees, and aromatic drinks; coffees of chicory and sweet acorns.
Chocolates.
Sugars intended for domestic and other uses.
Various products of confectionery: Sugar-plums, sugar bon-bons, *foridants* (a kind of bon-bon), nougat, angelica, anise, sweet-meats, and jellies.
Conserves.
Brandied fruits.
Sirups and sugared liquors.

CLASS 73.—*Fermented drinks.*

Vin ordinaire, red and white.
Cordials and *vin cuits* (wines treated by fire?).
Sparkling wines.
Ciders, perry, and other drinks extracted from cereals.
Fermented drinks of every kind.
Brandies and alcohols.
Spirituous liquors, gin, rum, tafia, kirschwasser, etc.

Cider presses, oil presses.
Plans for poultry-houses, pigeon-coops, pheasant coops.
Apparatus for artificial hatching.
Plans of kennels.

CLASS 75.—*Viticulture.*

Plans of buildings used in viticulture.
Plant used in the cultivation of the vine.
Plant of wine vaults, cellars, and vats. Presses.
Courses and methods employed in fighting diseases of the vine.
Collections of vines.

CLASS 76.—*Useful and injurious insects.*

Bees, silk-worms, and various kinds of hornbyx.
Cochineal.
Material for raising and preserving bees and silk-worms.
Material and methods used in the destruction of injurious insects.

CLASS 77.—*Fish, crustacea, and mollusks.*

Useful aquatic animals in the live state.
Aquariums, methods of pisciculture.
Material for rearing fish, mollusks, and leeches.

NINTH GROUP.

HORTICULTURE.

CLASS 78.—*Conservatories and material used in horticulture.*

Tools of the gardener, nursery-gardener, and cultivator of flowers.
Apparatus for watering, keeping up turf.
Large conservatories and their appurtenances.
Small room-conservatories and window-conservatories.
Aquariums for aquatic plants.
Fountains and apparatus for the ornamentation of gardens.

CLASS 81.—*Fruits and fruit trees*

Species of plants and specimens of the products of cultivation indicating the characteristic types of the orchards of every country.

CLASS 82.—*Grains and plants of forest species.*

Species of plants and specimens of the products of cultivation indicating the methods of forest planting in use in every country.

CLASS 83.—*Plants grown under glass.*

Specimens of the methods of cultivating in use in various countries for pleasure or utility.

[Annex No. 2.]

Law of May 23, 1868, relating to the guaranty of inventions capable of being patented and of industrial designs, which shall be admitted to public expositions authorized by the Government throughout the whole Empire.

ARTICLE 1.

Every Frenchman or foreigner, author of a discovery or invention capable of being patented under the provisions of the law of July 5, 1844, or of an industrial design which may be registered conformably with the law of March 18, 1806, or his representatives may, if admitted to a public exposition authorized by the Government, cause the delivery to them, by the prefect or the sub-prefect of the department or arrondissement in which the exposition is opened, of a certificate describing the object exhibited.

ARTICLE 2.

This certificate assures to its receiver the same rights which a patent of invention or a legal registration of an industrial design would grant, dating from the day of admission and extending to the end of the third month following the closing of the exposition, without prejudice to the patent which the exhibitor may receive or to the registration he may effect before the expiration of this period.

ARTICLE 3.

The request for this certificate is to be made within the first month, at very latest, from the opening of the exposition.

It is to be addressed to the prefecture, or sub-prefecture, and to be accompanied by an accurate description of the thing to be guaranteed, and, if there be occasion, by a plan or drawing of the said article.

The requests as well as the decisions made by the prefect or sub-prefect are to be recorded in a special register, which shall be afterwards transmitted to the department of agriculture, commerce, and public works, and communication of its contents shall be made, without charge, on every request.

The delivery of the certificate shall be free of costs.

[Annex No. 3.]

Decree issued on the report of the minister of commerce and industry declaring the premises appropriated to the Universal Exposition of 1889 to be a Government customs-house.

THE PRESIDENT OF THE FRENCH REPUBLIC:

In view of the decree of November 8, 1884, and the law of July 6, 1886, authorizing the opening at Paris of a universal international exposition in 1889;

In view of article 34 of the law of December 17, 1814;

In view of article 4 of the law of July 5, 1836;
On the report of the minister of commerce and industry and of the minister of finance:

DECREES.

ARTICLE 1.

The premises appropriated to the Universal Exposition of 1889 are declared to be a Government customs-house.

ARTICLE 2.

Articles intended for the Universal Exposition shall be forwarded directly to the palace of the Exposition, under the conditions of international transit, or of ordinary transit, according to the choice of the interested parties, by all the offices opened to this transit, and free from statistical duty (*droit de statistique*).

Transmission by international transit shall be made without examination.

Transmission by ordinary transit shall give occasion only to a brief examination, and the seals of the custom-house shall be affixed without charge.

ARTICLE 3.

Goods admitted to the Universal Exposition which shall be offered for consumption shall be subjected, of whatever origin they may be, only to the duties applicable to similar products of the most favored nation.

ARTICLE 4.

The minister of commerce and industry and the minister of finance shall be charged, so far as each may be concerned, with the execution of the present decree.

Done at Mont-sous-Vandrey, August 25, 1886.

JULES GRÉVY.

By the President of the Republic.
The minister of commerce and industry:
ÉDOUARD LOCKROY.
The minister of finance:
SADI-CARNOT.

[Annex No. 4.]

DEPARTMENT OF COMMERCE AND INDUSTRY.	DEPARTMENT OF ———
Universal Exposition of 1889.	GROUP NO. ———
FRENCH SECTION.	CLASS NO. ———

Request for admission.

I, the undersigned[1] ——— ———, residing at[2] ——— ———, request to exhibit the products described below[3] ——— ———, for the exhibition of which I shall need space corresponding to the following dimensions[4]:

Breadth, ———; height, ———; depth, ———. By these presents I declare that I am informed of the general regulation and accept it.

——— ———,
[Signature.]

[1] Name, Christian names, firm.

[2] Give the exact residence in the cities; name carefully the commune, canton, and arrondissement where the factories and isolated establishments are situated.

[3] Give as complete details as possible of the articles offered; state whether it is intended to exhibit machines or other objects demanding foundations or special constructions; and furnish, as far as possible, an annexed sketch of these foundations or constructions, with their cost. In case it is desired to exhibit apparatus demanding the employment of water, gas, or steam, it is requested that the quantity and pressure of gas or of vapor necessary shall be stated. If it is desired to put the machines in motion, it is necessary to give information of the rapidity of each and of the motive force needed, expressed in horse-power.

[4] These dimensions should comprise those of the cases, furniture, or platforms necessary for the exhibition of the articles.

[Extract from the general regulations.]

ARTICLE 31.

The director-general of the management can always direct the withdrawal of articles of any origin which by their nature or appearance may appear injurious to or incompatible with the purpose of the exposition or its proprieties.

ARTICLE 32.

* * * * * * * *

Applications for admission from Paris and the department of the Seine are to be sent directly to the minister of commerce and industry, the commissioner-general at Paris, Quai d'Orsay, 25, or to the director-general of the management, Rue de Varenne, 80.

Applications from the departments will be received through the departmental committees, which will forward them to the same addresses.

All French applications thus collected are to be submitted according to their class to the examination of the committees on admission appointed by the minister and deciding without appeal.

It is essential that all applications should be forwarded as rapidly as possible.

The printed forms of applications for admission shall be put without charge at the disposition of the public:

(1) In Paris: At the department of commerce and industry, Quai d'Orsay, 25, and boulevard St. Germain, 244; at the administrative buildings of the exposition (avenue de la Bourdonnaye and rue de Varenne, 80), at the tribunal and the chamber of commerce.

(2) In the departments: At the prefectures, sub-prefectures, chambers of commerce, tribunals of commerce, consultative chambers of the arts and manufactures, and at the places where the departmental committees sit, as well as at the places of distribution which they shall have designated.

No. 2.

Mr. Bayard to Mr. Roustan.

DEPARTMENT OF STATE,
Washington, April 13, 1887.

SIR: I have the honor to acknowledge the receipt of your note of the 6th instant in which you invite this Government to participate in the international exhibition which is to be held at Paris in 1889.

The matter will be brought to the attention of Congress at its next session, with a recommendation that provision be made for the participation of this country in the proposed exhibition.

I am, sir, your obedient servant,

T. F. BAYARD.

Hon. THE. ROUSTAN.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 70.

EXAMINATION OF SPRING CREEK, NEW YORK.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, a report upon the preliminary examination of Spring Creek, New York.

JANUARY 12, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 9, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 5th instant from the Chief of Engineers, together with a copy of a report from Lieut. Col. Walter McFarland, Corps of Engineers, of the results of the preliminary examination of Spring Creek, New York, made to comply with the requirements of section 6 of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C. January 5, 1888.

SIR: I have the honor to submit herewith a copy of a report to this office from Lieut. Col. Walter McFarland, Corps of Engineers, of the results of the preliminary examination of Spring Creek, New York, made to comply with the requirements of section 6 of the river and harbor act of August 5, 1886.

The imperfect description in the act of the locality of this stream, which has but recently been ascertained, has delayed this examination.

Concurring in the opinion of the local engineer that Spring Creek is not worthy of improvement by the General Government, I have not directed an additional survey to made.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig.-Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF SPRING CREEK, NEW YORK.

ENGINEER OFFICE, UNITED STATES ARMY,
New York, N. Y., December 30, 1887.

GENERAL: I have the honor to submit the following report upon the preliminary examination of Spring Creek, New York, made under the instructions of your letter of the 17th instant.

Spring Creek, New York, is a narrow, crooked, and shallow tidal stream, 3 or 4 miles long, flowing from the vicinity of East New York and the twenty-sixth ward of Brooklyn southerly into Jamaica Bay, on the south shore of Long Island. It is called Old Mill Creek on the Coast Survey chart.

Its navigation is closed about a mile above its mouth by a dam. Its channel is about 40 feet wide, and it is claimed that it is 3 feet deep at low water, but the depth in the bay at the mouth of the creek at low water is less than a foot.

The rise of the tide is about 5 feet, and vessels of this draught can at high water run up to the dam and the bulk-head near it built by the city of Brooklyn.

It is desired that the creek shall be straightened and the channel deepened to 4 feet at mean low water, when, it is believed by those interested in its improvement, nearly all of the coal and building materials needed by this large and rapidly growing part of the city of Brooklyn, which now is brought by drays and rail from the East River, from 7 to 9 miles distant, would be brought by this water-route.

At present the creek has no commerce, with the exception of an occasional sloop load of manure or coal brought in, and nothing is sent out.

Under the circumstances, while it is doubtless very desirable, on account of local interest, that this water-way to the twenty-sixth ward of Brooklyn should be opened, it appears to me that this is the duty of the city or of the county concerned, rather than that of the General Government, since no public necessity or convenience of commerce would be subserved by it.

I have to report, therefore, that I do not consider Spring Creek, New York, worthy of being improved by the General Government.

I transmit herewith a copy of the report of G. W. Kuehnle, who was detailed to make the examination.

Very respectfully, your obedient servant,

WALTER MCFARLAND,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. G. W. KUEHNLE.

NEW YORK, *December* 23, 1887.

SIR: I have the honor to submit the following report of an examination of Spring Creek, New York, made December 22, in compliance with your verbal orders of December 21, 1887.

Spring Creek (called Old Mill Creek on Coast Survey chart of Jamaica Bay) is a tributary of Jamaica Bay and is the nearest approach by water to East New York and the twenty-sixth ward, Brooklyn. The course of the creek is through salt marsh, and has several very sharp bends in it. At the head of navigation there are an old dam and tide mill (built in 1810) owned by J. L. Van Wicklen, a small hotel owned by D. L. Van Wicklen, and an old bulkhead owned by the city of Brooklyn. The

distance from the head of navigation to the mouth of the creek is less than a mile, and the least depth about 1 foot at low water. The depth in the bay near the month of the creek as shown on the Coast Survey chart, 1879, is three-fourths foot, but Mr. Van Wicklen claims that vessels can carry 3 feet to the mouth. The improvement desired is to have the creek straightened by cutting off two of the bends (which appear to hinder navigation as much as the want of depth), the channel widened to 60 feet (the present width being about 40 feet for part of the creek) and, a channel dredged to 4 feet at low water from the Old Mill Landing to deep water in Jamaica Bay.

The present commerce of the creek is practically nothing, consisting of an occasional sloop-load of manure or coal for the neighboring truck farmers. At the time of the building of the Brooklyn water-works most of the material used on two sections of the work was brought to the Old Mill Landing. There are quite a number of small boats at the head of the creek that are nearly all used by pleasure-seekers in the summer.

It is evident from the numerous new buildings in the course of erection and other visible signs of improvemant that this section of Brooklyn is rapidly developing.

It is claimed, by those interested, that by improving the creek all the coal and building material used in the vicinity and the coal used by the Brooklyn and Long Island Water-Works would be shipped by water to Old Mill Landing. The present means of getting these supplies is by trucking from Brooklyn (a distance of 7 miles) and by Long Island Railroad in a round-about manner from Hunter's Point via Jamaica. It seems to me that the effect of the improvement is greatly overestimated by the promoters, since, if the route were a profitable one, the present depth at high water (about 6 feet) would be sufficient for light-draught vessels and canal-boats, and there is no evidence that any such vessels use the creek, excepting the very occasional ones loaded with manure or coal for a near-by truck farmer. There is no outgoing freight, as there are no factories or mills in the vicinity.

I was not able to find any one that could give me any figures in regard to the amount of material that would be expected to come by way of the creek, but have been promised that such statistics will be forwarded to you in a few days.

Taking into consideration the fact that the benefit, if any, would be a purely local one, and not to the advantage of general commerce, and that it is extremely doubtful if an improvement of the channel would increase the traffic, I can not report that Spring Creek is worthy of improvement.

The cost of a survey and map would not exceed $150.

The cost of the improvement can not be given with any accuracy without a survey, but ought to be less than $10,000.

Very respectfully, your obedient servant,

G. W. KUEHNLE.

Lieut. Col. WALTER MCFARLAND,
Corps of Engineers, U. S. A.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 71.

REVISION OF THE TARIFF LAWS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Copies of correspondence relating to the revision of the tariff laws.

JANUARY 12, 1888.—Referred to the Committee on Ways and Means and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 11, 1888.

SIR: The following correspondence, addressed to this Department and relating to revision of the tariff, is herewith respectfully transmitted for the information of Congress:

(1) A communication, dated November 3, 1887, with three inclosures, from Mr. W. H. Emerson, of Boston, in regard to a reduction of duty on sugar, and recommending the free admission of molasses, now dutiable at 4 cents per gallon.

(2) A communication, dated November 9, 1887, from Messrs. Frederick S. Robinson & Co., of New York, recommending the free admission of oranges and lemons, or otherwise a reduction in the duty and and imposition of uniform specific rates thereon, and on limes, and the abolition of damage allowance on these articles.

(3) A communication, dated the 28th ultimo, from Mr. Wm. Pickhardt, of New York, recommending the free admission of various dyestuffs, colors, extracts, and other articles entering as raw materials in important domestic manufactures, and the removal of the internal revenue tax from alcohol used in the industrial arts.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

Hon. J. G. CARLISLE,
Speaker of the House of Representatives.

BOSTON, *November* 3, 1887.

DEAR SIR: Believing a change in tariff is essential to the welfare and prosperity of our people, and noting with pleasure the various reports concerning the proposed policy of the administration, I take the liberty to address you. The reports to which

I refer are those stating that the President in his coming message, and you in your annual report, will recommend a liberal reduction on many articles now on our tariff list. The article of sugar is prominent in all discussions concerning reduced revenue from the large amount received by the Government from this source, it coming but little into competition with home products; the fact that it is an article of food essential in every family, rich or poor, and also that the duty is so large a percentage of its value. Assuming, in the event of any change, the duty on sugar will be largely reduced, I desire respectfully and as briefly as possible to call your attention to molasses in its relation to sugar. I am engaged in the manufacture of sugar from molasses, known as molasses or domestic sugar. This is an industry carried on in Philadelphia, New York, Boston, and Portland, and is allied closely to sugar business. A reduction of duty on foreign sugar is unfavorable to molasses refiners here. The point I wish to make clear is, should the proposition be made to reduce sugar duty 50 per cent., that the entire duty of 4 cents per gallon be removed from molasses. The sugars made from molasses are sold generally on basis of 82 degrees polarization. We average 5 pounds of sugar to each gallon molasses, and pay 4 cents duty on the gallon molasses. Foreign sugar, testing 82 degrees polariscope, pays $1.68 per hundred pounds. One hundred gallons molasses, yielding 500 pounds domestic sugar, pays $3 duty. Five hundred pounds foreign 82 degrees sugar pays $8.40.

500 pounds 82 degrees foreign	$8.40
500 pounds 82 degrees domestic	4.00
	4.40

So the difference is 88 cents per 100 pounds in favor of domestic sugars. Now, should the duty on sugar be reduced 50 per cent. and none on molasses, all the protection, if I may use that term, would be gone, and a positive advantage given to foreign sugar over domestic. Should duty be reduced 50 per cent. on sugar and all the duty from molasses, we are then at a disadvantage of 8 cents per 100 as compared with present duty—

500 pounds 82 degrees foreign pays	$8.40
Less 50 per cent	4.20
	4.20

against 500 domestic, 100 gallons, at 4 cents, $4; 50 per cent.; thus taking off more than molasses duty.

The business is one which affects directly many of our industries. I inclose statistics showing—

	Hogsheads.
Philadelphia boiled in 1886	138,709
New York boiled in 1886	65,000
Boston, 17,000; Portland, 13,000	30,000
	233,709

For this American cooperage is used almost entirely. It is imported almost exclusively in American vessels, and for six months a large fleet is employed constantly in this business. Besides the men employed in vessels a very large numberare employed in discharging, coopering, and in the refineries themselves. Another advantage to American industry is the fact that most of the sirup or residuum is again exported. A decided difficulty presents itself in the low price of molasses in Cuba and elsewhere. The price is so low that many estates allow molasses to run to waste, because it does not pay expenses to ship. The average price of boiling molasses this year is about 15 cents per gallon in bond. The expenses, freight, cask in Cuba, export charges, etc., amount to nearly 13 cents per gallon, so there is no chance to lower price at point of production.

Again, as to quality, etc., almost every gallon of Cuba molasses, most of Barbadoes, and a large quantity of Porto Rico is used for boiling and so does not come in competition with Louisiana, or better known as New Orleans, molasses. This latter is not used at all for boiling, but for family purposes. There is no occasion for Louisiana to object (if she should). The largest dealer in the city of New Orleans, handling nearly, if not fully, one-half the crop, told me personally this week this change on molasses would not affect New Orleans molasses in the least. The last two years, and so far this, I have received more New Orleans molasses than any other house (save one) in the North. My business entirely for twelve years, and indirectly for ten preceding, has been in molasses, so I feel somewhat qualified to judge. The price of the two will prove my statement. While the average price of New Orleans molasses in New York the past year was 45 cents per gallon, boiling was 15 cents in bond.

I believe New Orleans planters would make more money by making more molasses and less sugar. They have sold their dry refined sugar at a fraction over 5 cents per pound, whereas molasses has sold over 40 cents per gallon, or more than 4 cents a pound for water, impurities and all.

Trusting this may receive your respectful consideration, I remain,

Most respectfully, yours,

W. H. EMERSON.

Hon. C. S. FAIRCHILD,
Secretary Treasury, Washington, D. C.

NEW YORK, *October* 10, 1887.

DEAR SIR: In reply to yours of 8th, the comparative receipts of molasses at this port to October 1 were:

From—	1886.	1887.
	Hhds.	*Hhds.*
Porto Rico	4,525	8,827
Cuba	61,435	63,331
English islands	2,744	10,627
St. Croix	795	1,108
San Domingo	90	.....
Total	69,589	83,893

Yours, truly,

GUSTAVUS COOMBS.

Mr. W. H. EMERSON, *Boston.*

PHILADELPHIA, *October* 10, 1887.

DEAR SIR: Yours of 8th instant received. Our imports of molasses since January 1, 1887, to date, are: Cuba, 92,502 hogsheads, 9,697 tierces, 3 barrels; Porto Rico, 760 hogsheads, 83 tierces; English islands, 9,531 puncheons, 354 tierces, 696 barrels.

For last and preceding years' imports we inclose our last annual circular statement.

Yours, truly,

JNO. F. CRAIG & CO.

Mr. W. H. EMERSON, *Boston.*

[Circular of John F. Craig & Co., 143 South Front street.]

PHILADELPHIA, *January* 1, 1887.

Receipts of sugar from January 1 *to December* 31.

From—	Hogsheads.	Boxes and bags.	1886.	1885.	1884.	1883.
			Tons.	*Tons.*	*Tons.*	*Tons.*
Cuba	75,831	375,442	84,268	78,276	65,263	36,856
English islands	5,587	38,991	8,592	5,828	9,809	21,258
French islands	634	.....	382	674	4,531	4,570
Porto Rico	1,331	.....	802	3,744	1,432	1,005
Brazil	.....	114,994	7,700	8,653	8,125	3,846
Philippine Islands	.....	132,455	3,548	1,755	9,795	.....
German beet	.....	50,765	5,665	6,260	1,936	1,493
India	.....	29,410	1,970	.....	.....	.....
Total	83,383	742,057	.....	105,190	100,891	69,028

Stock of sugar on hand January 1, 1887, 846 hogsheads, 1,295 bags.

Receipts of molasses from January 1 to December 31.

From—	1886.	1885.	1884.	1883.
	Hhds.	*Hhds.*	*Hhds.*	*Hhds.*
Havana	13,421	14,275	15,799	6,384
Matanzas	23,566	18,989	9,551	19,684
Cardenas	69,715	51,524	43,618	26,137
Sagua	19,672	19,824	14,396	9,183
Cienfuegos	4,334	2,063	2,049	2,242
Trinidad	1,969	1,288	2,741	1,935
Calbarien	3,218	2,357	1,955	.....
Manzanilla	1,290	1,259	.....	.....
Porto Rico	.....	142	473	.....
Barbadoes	1,054	2,344	8	1,134
Port Spain	20	.....	.....	.....
Total	138,259	114,065	90,590	66,699

Molasses boiled—	Hogsheads.
1886	*138,709
1885	113,093
1884	92,173
1883	64,062

* Sales to jobbers, 694 hogsheads. Receipts from neighboring ports, 1,144 hogsheads.

NEW YORK, *November* 9, 1887.

SIR: We have the honor to acknowledge receipt of your favor 19th ultimo, and in obedience thereto we take the liberty to express our views regarding the relief urgently needed by importers, dealers, and consumers of foreign fruits, which we hope will be considered as deserving your support should a new tariff be submitted at the coming session of Congress.

I. Oranges and lemons can not be classified as a luxury, but must be considered an actual necessity conducive to the health of our community and encouraging sobriety, and the taxing of a heavy duty on such a commodity is laying on our people an unjust burden, superfluous and unreasonable.

Bananas and pine-apples are free; oranges and lemons in consequence should also be placed on the free list.

This country exports from 1,000,000 to 2,000,000 barrels of apples annually, and the same are admitted free in England, while about 100,000 barrels oranges from the British possessions are here taxed 55 cents per barrel, which is evidently unjust.

We should follow England's system and open our ports to free competition for the benefit of consumers. There is no logic in taxing the majority for the benefit of the few, particularly when the few require no protection, but only desire protection in order to obtain better returns for the production of the soil, and to the detriment and discomfort of consumers.

II. Should you, however, consider it useless to recommend at present free duty on oranges and lemons, the object of any change to be made in the tariff being to reduce taxation, we hope at least for a reduction and advise the following.

ORANGES, LEMONS, AND LIMES.

	Per package.
In packages of capacity not exceeding 1¼ cubic feet	5 cents.
In packages of capacity exceeding 1¼ cubic feet but not exceeding 2½ cubic feet	10 cents.
In packages of capacity exceeding 2½ cubic feet but not exceeding 5 cubic feet	20 cents.

Packages of capacity exceeding 5 cubic feet, 5 cents for every additional cubic foot or fraction thereof.

Oranges, lemons, and limes in bulk, $1 per 1,000. By assessing specific duty on all oranges and lemons as above proposed, and by abolishing damage allowance, the above represents about 40 per cent. reduction on the existing ad valorem and specific duties with rebate for damage.

III. Should you, however, consider also useless to recommend even a reduction, we propose the following:

ORANGES, LEMONS, AND LIMES.

	Per package.
In packages of capacity not exceeding 1½ cubic feet	7½ cents.
In packages of capacity exceeding 1½ cubic feet but not exceeding 2½ cubic feet	15 cents.
In packages of capacity exceeding 2½ cubic feet but not exceeding 5 cubic feet	30 cents.

Packages of capacity exceeding 5 cubic feet, 10 cents for every additional cubic foot or fraction thereof.

Oranges, lemons, and limes in bulk, $1.50 per 1,000. The above, by abolishing damage allowance, will be equivalent to the existing duty.

IV. *Damage allowance.*—Although perishable articles are more entitled to allowance for damage, the generality favors its abolishment, provided it is equitably compensated by reducing the duty correspondingly as above suggested.

V. *Method of taxing.*—It is impracticable to tax by weight because of delay and other good reasons. It can not be done on quantity as packages are not uniform in their contents. Ad valorem is not advisable on account of the impossibility of finding the true market value, and for said reason it was partially changed to specific at the last revision of the tariff, and specific duty has worked to the satisfaction of the receivers and has better protected the revenue, and which is the most practical and consistent method, only it should have been made general as then proposed by us, and not both specific and ad valorem on same kind of fruit, as it would have rightly placed all nations on the same footing, which equity certainly demands, particularly as the Italian fruit can not be packed in cases or barrels, nor Spanish or West Indies in boxes, as the nature and size of the fruit requires the continuance of same style of packages as originally introduced, and known as such in this country, and any other change would be impracticable and disastrous, and to continue charging ad valorem and specific duty on same kind of fruit is inconsistent and favoring the Spanish fruit against the Italian and West Indies.

Oranges from Valencia, Spain, the past season, under an ad valorem duty assessed on the value of the fruit only, and not on the charges, have paid 16 and 30 cents per case on an average, hardly 25 cents per case, of 5 cubic feet capacity, against a specific duty of 25 cents per box of 2½ cubic feet capacity on Italian oranges and 55 cents per barrel on West Indies, which discrimination is a palpable injustice and should be corrected.

VI. In the Hon. Mr. Randall's proposed tariff bills, last session of Congress, the duty on oranges and lemons was increased, and against any increase we respectfully beg to protest. Whatever is done, there should be no increase.

Hundreds of thousands of our citizens depend for their living on the continuance of the traffic in foreign fruits, and as the object of new legislation will be to reduce taxation, the interests of the fruit people and consumers should receive some consideration, particularly as the business can not endure the existing high duty, and should you kindly grant your valuable support in recommending some relief, or at least the correction of the inequality and injustice now existing, you will confer a great favor and you will be doing an act of justice.

We have the honor to remain, your obedient servants,

FREDERICK S. ROBINSON & CO.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury, Washington, D. C.

NEW YORK, *December* 28, 1887.

SIR: Agreeably to your request I state herewith, in writing, my views on the tariff laws relating to dye-stuffs, chemicals, and colors used in the industrial arts.

In the first place, I beg leave to mention that myself and partner have been dealing in the various articles of this branch of business for more than twenty-five years, during which time we have gained an intimate acquaintance with the textile and kindred manufacturing industries of this country.

As it is well known, dye-stuffs, chemicals, and colors form a very essential part in the production of cotton and woolen fabrics, and also of paper and manufactures of paper, and of the various kinds of leather, and these articles augment the cost of the same to a considerable extent.

It is certainly of the greatest importance to the manufacturer of these commodities to produce them at as low a cost as possible, so that he may successfully compete with

his foreign competitors; it makes assuredly a great difference to a manufacturer whether he has to run the market risks on the cost of his finished goods to the amount of $100 or on $60, the lighter his running expenses or his bills for necessary outlays are, while he is preparing his products for the market and before he can expect sales and returns, the better is he able to produce a certain amount or quantity of goods; in other words, the lower the cost of production, the less are his risks in the markets, and he can with more safety obtain capital and is the better able to keep the mills running; such reduction of cost would seem an absolute benefit to both the manufacturing industries as well as to the consumers.

Fortunately, this country produces some staples, namely, cotton-wool and some other vegetable fibers, in the articles manufactured from which it need not fear any serious competition.

The various commodities which are made from these staples can be produced in this country at about as low a cost as anywhere in the world, provided the cost is not augmented by taxes on articles which are absolutely necessary to prepare them for the multiplied tastes and necessities of the consumers living in different sections of the country.

These manufacturing industries, which are, as is well known, immensely extensive and of vast importance, should be fostered as much as possible, they should most assuredly not be hampered or burdened, and consequently made risky by the imposition of taxes—to be paid in advance by the manufacturer—on the materials which they need for their successful production.

The domestic competition in these manufactures is great, and so much so that some old establishments have been compelled to stop operation and others to liquidate; the profits to these manufactures are generally small, and in order to obtain any, the utmost economy and close intelligent application are absolutely required.

The remarks I have made above apply equally to the manufacture of wool and leather fabrics, except as regards the staples sheeps' wool and some other animal fibers, skins, and hides.

It is well known that the textile and kindred manufacturing industries in Europe obtain the materials which are required for the successful production of the finished products free from taxes. In some instances light taxes are imposed, but the prevailing policy is, that the manufacturing industries should not be burdened or hampered, but, on the contrary, should have free scope for development. The thorough adoption of such a policy in this country would seem to be beneficial, and in a high degree, to all its people.

Under such considerations all dye-stuffs, chemicals, colors, mordants, and assistants, used in the industrial arts, ought to be free from taxation, or where an exception should be deemed politic, the tax should in all cases be very light.

For many years such was the policy in this country, and it still prevails to a certain extent, but it has been carried out in late years very imperfectly. Within the last quarter of a century very great improvements and inventions have been made in the production and use of dye-stuffs and colors, and our present tariff laws ought to be amended or framed in conformity with the present state of the arts and the needs of the great industries of this country.

The principle that home industries should be fostered underlies the tariff legislation of this country. Prior to the year 1860 almost all dye-stuffs and colors used by our manufacturers were of vegetable origin, and in a more or less natural or crude state, with probably one exception, namely, artificial ultramarine blue.

When the old tariff laws are examined, it will be found that there were enumerated on the free list such articles as dyeing or tanning articles in a crude state used in dyeing or tanning; dye-woods, barks, indigo, cochineal, madder and munjeet; lac-dye, safflower, sumac, cudbear, lichens and mosses; nut-galls, cutch or catechu, divi-divi, and probably some others.

As the state of the arts advanced, and improvements were made therein, the tariff laws were amended to meet such improvements, and there will be found in the various revisions of the tariff laws many new dye-stuffs, either as additions to the free list, or enumerated at very low rates of duty, notably extracts, such as extracts or preparations of madder, called garancine, alizarine, etc.; extracts of safflower, called safflower carmine; extracts of lichens, called archil or orchil; extracts of dye-woods and barks, etc.

To these were added, with the developments in the arts, some artificial dyes and also mordants which were generally and largely used in the manufacture of such cotton fabrics as calico prints, ginghams, Turkey red cloth and yarns, tickings, and awnings, etc., namely, aniline oil and aniline salts for blacks; artificial alizarine, a substitute for madder and its derivatives, for reds, purples, chocolates and blacks; albumen egg or blood, a mordant for fixing dyes on cotton fibers; lactrine, a product of milk, a mordant used similarly to albumen.

From the year 1860 and up to about the year 1880, the dyes made from aniline (aniline is a derivative of bensol, which is found ready formed or free in coal-tar) were

generally called "fancy dyes," and this appellation was not much out of the way on account of their beauty, brilliancy of color, etc., surpassing by far all the vegetable dyes, and also on account of the prices which were paid for them.

But these so called aniline dyes, together with all other dyes prepared from derivatives of bituminous coal, are no longer "fancy dyes." They have superseded the vegetable dyestuffs to a very great extent, and have almost entirely supplanted madder, garancine, natural alazarine and purpurine, cochineal safflower, lacdye, and also to a very great extent, indigo and other blue dyes, dyewoods and barks, and extracts thereof.

These new dyes are now generally applied in the industrial arts on account of cheapness, easy mode of application, and other essential properties. On account of the successful production of the coal-tar dyes, new branches of manufacturing industries have developed which could never have been thought of without them.

These coal-tar dyes are also largely consumed by a very important industry which has greatly developed in this country during the last twenty years, namely, the color-manufacturing industry for paper and paints, and are, in fact, about its most important raw material.

In the year 1882 the duty on aniline dyes was 50 cents per pound and 35 per cent. ad valorem. This specific duty was then considered exhorbitant, and it was reduced by the revision of the tariff laws in 1883 to 35 per cent. ad valorem only. It abolished rightly the specific duty which will always be unjust on articles of various grades of qualities and value, although they may commonly be known by a generic term.

These artificial or coal-tar dyes are almost all manufactured in Europe. Every European manufacturing establishment of this kind has its agent or personal representative in this country. The prices which rule here are identical with those ruling in Europe, except that they are so much higher here as the import taxes which are levied upon them augment their prices. The competition in them is exceedingly keen and sharp, and in this country there does not exist to-day a single instance of a monopoly for any of these dyestuffs, even where letters patent have been granted by the Government, except probably a single instance, viz, that of acid fuchsine, also called acid magenta.

From time to time efforts have been made to manufacture aniline dyes in this country, but up to this day material success has not been visible. Some establishments have lingered along, others have utterly failed, although the principal staple or raw material for them, aniline, was on the free list since the year 1870.

The time has arrived, it seems to me, when all the dyestuffs and the colors used or consumed in the industrial arts should be free of taxes; no matter whether they are of vegetable or of mineral origin, no discriminations ought to prevail among them. The chemicals and the mordants and assistants which are consumed in the industrial arts ought also to be free of taxes, or if it should be deemed politic to impose any on some of them, they should be extremely light, not burdensome.

By adopting thoroughly such a policy, all the troubles resulting from attempted undervaluations would disappear, and so would also the endless litigations brought on by the various interpretations of the terms of the law.

By enabling the manufacturing industries of finished fabrics to procure the materials which they absolutely need for successful production (raw materials to them) free of taxes and at low cost, they would thereby be greatly assisted, fostered, and strengthened, in fact given free scope for a natural development; by doing so the natural resources and the agricultural industries of this country, notably those of cotton wool, will gain freer scope for development. It is gratifying to reflect that no one would be seriously injured by the adoption of such a policy, except, perhaps, a few whose undertakings were probably based upon percarious foundations; but the injury to these few would be inconsiderable in comparison with the immense benefits resulting from lightening the burdens which are now imposed on the great industries of the country.

The discriminations prevailing in the present tariff laws are anomalous. For an illustration of this I will take, for an example, the "artificial ultramarine blue," which is probably the very first artificial color or dye ever successfully produced for the arts. It was first manufactured in France and about the same time in Germany. The processes, for making it probably differed somewhat, but more in a practical than in a scientific sense. This blue is almost entirely used or consumed in the cotton and paper manufacturing industries. The duties levied on this extremly important artifical color were up to the year 1869, 25 per cent. ad valorem, but then the rate was changed to 6 cents a pound. Soon afterwards parties began to manufacture it in this country and they succeeded remarkably well.

By the revision of the tariff laws in 1883, the rate of duty was lowered to 5 cents a pound.

The quantity of ultramarine blue imported during the fiscal year ending June 30, 1886, amounted to .....pounds..	1,060,547.50
Value.....	$98,613.41

The duty collected on it was	$53,027.38
During the fiscal year ending June 30, 1887, it amounted to...pounds..	647,372.00
Value	$62,535.00
The duty collected on it was	32,369.10

I will state here that in the manufacture of ultramarine blue a series of grades in qualities is produced; they are carefully separated or sorted on account of shades of color, durability, and other essential properties; the average value of this imported blue was consequently, in the fiscal years 1885–'87, nearly 10 cents a pound. The duty collected on it rated over 50 per cent.; this was, of course, on the finest grades only; none else could be imported. The great bulk for general consumption is sold in Europe for 5 cents a pound, and in this country for 9 cents.

There are now established in this country three factories for producing it. They are all situated in the immediate neighborhood of this city.

The natural resources of this country afford and supply many raw materials useful and essential for the successful production of dyestuffs, chemicals, and colors, but where such have to be imported they should certainly enter absolutely free. The import freights on them are low, and have been so for a long time. I am of opinion that manufacturers of dyestuffs, chemicals, and colors located in Germany and Switzerland are subject to as high expenses for freightage and shipping on raw materials, which they largely import, notably from England, as manufacturers of similar products would be in this country.

I will venture to make a suggestion relating to the internal-revenue tax, namely, on alcohol used or consumed in the industrial arts. As it enters largely into our manufacturing industries it seems proper that it should be adverted to.

There is probably no country where alcohol can be and is produced at so low a cost as in the United States. In all industrial countries alcohol is allowed to be consumed for manufacturing purposes free of taxes; or, where an exception is made, the taxes imposed upon it are light. To prevent the use of alcohol in such cases as a beverage, there is mixed with it methyl alcohol (wood alcohol), turpentine, or camphor, and a slight mixture of either of these renders the alcohol so offensive to the smell and taste as to effectually prevent its use for personal consumption.

The admixtures of methyl alcohol or of turpentine are, for many uses of alcohol in the industrial arts, not injurious or offensive; but they are very offensive, even injurious, in the production of vinegar, an extremely important manufacture, whose products are largely consumed in the industrial arts. In the production of vinegar, methyl alcohol and turpentine act against the necessary fermentation; besides, the offensive odor remains, while camphor is so volatile that it neither hinders the fermentation nor affects the aroma and taste of the vinegar.

The use of alcohol in the various manufacturing industries is manifold. It is directly applied without conversion for dissolving and extracting dyestuffs and mordants for cotton, woolen, and other fibers; among others, it is employed for the purpose of extracting from nut-galls a mordant largely used for fixing dyestuffs on cotton fibers, which is known as tannin or tannic acid. The alcohol is, however, substantially recovered after the extraction has been effected, yet the import duty on tannin is $1 a pound; its price is in Europe below 30 cents a pound, and in this country it is about 50 cents.

Alcohol is also very largely required for the production of numerous other mordants which are absolute necessities for fixing and developing dyes on cotton fibers. For this purpose it must first be converted into vinegar, and this is used for making certain mineral acetates, viz, acetates of lead, copper, iron, etc.

Some of these acetates are used directly as mordants, while others, such as acetate of lead (sugar of lead), are used as such after having been converted into acetate of alumina.

For some purposes wood alcohol (methyl alcohol) is used as a substitute for grain alcohol, and wood acid (pyroligneous acid) in place of vinegar; they can, however, not be used as such substitutes for a great many purposes.

If the tax was taken off of alcohol consumed in the industrial arts it would relieve our cotton and kindred industries of a great burden, and at the same time I am of opinion that many products, where the use of alcohol is required in their manufacture, could profitably be exported.

With the hope that I have expressed my views intelligibly,

I remain, sir, respectfully yours,

WM. PICKHARDT.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury, Washington, D. C.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 72.

BUREAU OF LABOR.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A communication from the Commissioner of Labor submitting an increased estimate of appropriation for rent of buildings for that Bureau for fiscal year 1889.

JANUARY 13, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 12, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Commissioner of Labor of the 22d ultimo, to the Secretary of the Interior, in relation to the necessity of increasing the estimate for rent of buildings for the Bureau of Labor, to be found on page 60 of the Book of Estimates for 1889, from $2,400 to $3,000, which is forwarded by the Secretary with his recommendation that the sum of $3,000 be appropriated.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
BUREAU OF LABOR,
Washington, December 22, 1887.

SIR: I have the honor to hand you herewith a copy of the letter addressed to you September 13, 1887, relating to estimates for certain incidental expenses of this Bureau, the chief item of which was $3,000 for rental. I find by the Book of Estimates for 1889, page 60, under "Rent of buildings, Department of the Interior," that the estimate for the Bureau of Labor is still $2,400, the same as the rent now paid.

Thinking that my letter of September 13 might have been overlooked in making up the estimate for the Department is my reason for now calling it to your attention. I may add that the Bureau is very much

cramped for room, and performs its work at a disadvantage, and that the estimate contained in the letter of September 13 ($3,000) is absolutely necessary to secure the proper conduct of our business.

I am, very respectfully,

CARROLL D. WRIGHT,
Commissioner.

The SECRETARY OF THE INTERIOR.

[Indorsement.]

DEPARTMENT OF THE INTERIOR,
December 23, 1887.

Respectfully forwarded to the honorable Secretary of the Treasury, with the recommendation that the increase for rent for Bureau of Labor be allowed as requested by the Commissioner.

H. L. MULDROW,
Acting Secretary.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 73.

FRAUDULENT TIMBER LAND ENTRIES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Attorney-General of an appropriation to pay Newton McCoy, for services and expenses as counsel for the United States in the prosecution of fraudulent timber land entries.

JANUARY 13, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 12, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General of the 10th instant, submitting for an appropriation the account, and its accompanying papers, of Newton McCoy, $560, for services and expenses as counsel for the United States in the conduct of certain hearings before the register and receiver of the land office at Oregon City, Oregon, of alleged fraudulent timber-land entries, there being no funds at the disposal of the Attorney-General available for the purpose.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, January 10, 1888.

SIR: Herewith inclosed are copies (1) petition of Newton McCoy, by his attorney, James A. McCormick, for compensation for services rendered in the city of Portland, State of Oregon, at the request of the United States attorney for that district, in taking charge of thirty hearings, and prosecuting the same, on behalf of the United States, before the register and receiver of the land office of Oregon City, Oregon; (2) and letter of June 4, 1885, from the Acting Secretary of the Department of the Interior; (3) letter of August 25, 1885, from Newton McCoy to

the Attorney-General, inclosing his account, in the sum of $560, taxed by the court for special services; (4) and of a letter of Mr. McCormick, of March 15, 1886, in relation to the services; the same being forwarded to you for submission to Congress for such action as it may think proper, the Department having no fund under its control for the payment of such employment.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

SYRACUSE, N. Y., *December* 27, 1887.

SIR: I inclose to you herewith a petition of Newton McCoy, of Portland, Oregon, to the Congress of the United States, and a draught of a bill, by which you and the proper accounting officers of the Treasury may be enabled to pay him in accordance with his sworn statement of fees and disbursements, which were submitted to you on August 25, 1885.

The petition speaks for itself. I believe it contains briefly all the essential facts and references to enable Congress or its proper committees to fully understand the nature of Mr. McCoy's claim, and the equity of it.

This petition and draught of bill are the results of an intimation made by you to the writer, in your office on or about January 16, 1887.

It has been suggested by Hon. Binger Hermann, member of Congress for Oregon (whose constituent Mr. McCoy is), that it will be necessary to secure your official indorsement or recommendation, upon these papers or apart therefrom, in order to insure their consideration by the Congress.

I therefore respectfully ask that you will make such indorsement or recommendation as may seem to you to be equitable; and that you will inclose it, with the petition and draught of bill, to my address, so that I can forward all of them to Mr. Hermann.

I shall gratefully appreciate your prompt action.

Very respectfully,

JAS. A. MCCORMICK,
Attorney for Petitioner.

The ATTORNEY-GENERAL OF THE UNITED STATES,
Washington, D. C.

To the Congress of the United States of America:

The petition of Newton McCoy respectfully shows:

That your petitioner now resides, and during all of the times hereinafter mentioned has resided, in the city of Portland, State of Oregon, doing business thereat as an attorney and counsellor-at-law.

That on or about the 10th day of June, 1885, your petitioner was appointed as special counsel, and as such instructed by the United States attorney for Oregon, Mr. J. F. Watson, to take charge of thirty hearings, and to prosecute the same on behalf of the United States, before the register and receiver of the land office at Oregon City, Oregon.

That your petitioner, in pursuance of his appointment and instructions as aforesaid, rendered legal services to the United States in conducting said hearings before the said register and receiver, from the 15th day of June to the 21st day of August, inclusive, of 1885, and in so doing expended money in traveling from the said place of hearing.

That on the 25th day of August, 1885, your petitioner submitted to the honorable Attorney-General of the United States a sworn statement of his fees and disbursements for and on account of the services aforesaid, amounting to the sum of $560.

That the said United States attorney on the same day approved of the said services and account, and certified the same to the said Attorney-General.

That thereafter, and on September 3, 1885, your petitioner was informed by the said Attorney-General that no compensation could be allowed to him for the service rendered as aforesaid for the reason that his appointment to the same was not made in strict and literal accordance with sections 363, 365 and 366, Revised Statutes of

the United States. That because of the said ruling of the honorable Attorney-General your petitioner remained wholly unpaid for his said services and the disbursements incident thereto.

Wherefore, your petitioner prays that you enact a law which, by the approval of the President, will enable the honorable Attorney-General and the proper accounting officers of the Treasury to pay him for his services and disbursements according to the account above mentioned.

Your petitioner respectfully refers to letters and documents now on file in the office of the honorable Attorney-General, and prays that you will examine them as evidence of this his claim; the said papers and documents being these, viz:

(1) Letter from the honorable Secretary of the Interior to the honorable Attorney-General, dated June 3, 1885, and referring to a telegram from Jas. A. McCormick, a special agent of the General Land Office.

(2) Telegram from the honorable Attorney-General to Jas. A. McCormick, special agent General Land Office at Oregon City, Oregon, dated June 5, 1885.

(3) Telegram from honorable Attorney-General to J. F. Watson, United States attorney at Portland, dated June 5, 1885.

(4) Letter of instructions from the honorable Attorney-General to United States Attorney Watson, Portland, Oregon, dated June 5, 1885, and including copy of a letter from honorable Commissioner General Land Office, dated June 3, 1885.

(5) Account of Newton McCoy, submitted to honorable Attorney-General August 25, 1885.

(6) Letter from McCoy accompanying the same.

(7) Letter from United States Attorney Watson, dated Portland, Oregon, August 25, 1885, to the honorable Attorney-General, referring to said account.

(8) Letter from honorable Attorney-General to McCoy, dated September 3, 1885, referring to his account.

(9) Letter from honorable Attorney-General to United States Attorney Watson, dated September 3, 1885, referring to the same.

(10) Letter from Jas. A. McCormick, special agent General Land Office, to honorable Attorney-General, dated Portland, Oregon, March 15, 1886, referring to the same.

(11) Letter from United States Attorney Watson to the honorable Attorney-General, dated March 22, 1886, referring to the same.

(12) Letter from the honorable Attorney-General dated March 31, 1886, in reply to Mr. Watson's said letter of March 22.

Respectfully,

NEWTON MCCOY,
By his attorney, JAS. A. MCCORMICK.

STATE OF NEW YORK,
Onondaga County, ss.:

James A. McCormick being duly sworn, says: That he is the duly empowered attorney of Newton McCoy, the petitioner aboved named; that as such attorney he prepared the foregoing petition; that the statements therein contained are true of his own knowledge.

JAS. A. MCCORMICK.

Subscribed and sworn to before me this 27th day of December, 1887.

W. G. CADY,
Notary Public, Onondaga County, N. Y.

Whereas, between the 14th of June and the 22d day of August, in the year 1885, Newton McCoy, of the city of Portland, State of Oregon, performed legal services for the United States under appointment and direction of the United States attorney for the district of Oregon as counsel in thirty hearings held before the register and receiver of the United States land office at Oregon City, Oregon; and

Whereas said McCoy, on the 25th day of August, 1885, submitted to the Attorney-General of the United States a sworn statement of his fees and disbursements for and on account of said services, amounting to $560; and the said Attorney-General, on the 3d day of September, 1885, ruled and informed said McCoy that no compensation could be allowed for his said services for the reason that his appointment to perform the same was not made in accordance with sections 363, 365, and 366 of the Revised Statutes of the United States: Therefore,

Be it enacted by the Senate and House of Representatives in Congress assembled, That the Attorney-General and the proper accounting officers of the Treasury be, and they are hereby, authorized and directed to pay to said McCoy, or to his legal representatives, the sum of $560, and an amount sufficient to pay the same is hereby appropriated from the Treasury.

DEPARTMENT OF THE INTERIOR,
Washington, June 4, 1885.

SIR: I have the honor to forward herewith copy of a letter from the Commissioner of the General Land Office, dated 3d instant, with copy of telegram from Special Agent McCormick, Portland, Oregon, dated the 2d instant, to the effect that certain hearings respecting the fraudulent character of certain entries of the public lands will be held before the register and receiver at Oregon City, commencing the 8th instant. Eminent counsel have been employed by the alleged trespassers. The special agent requests that the district attorney be instructed to take charge of the hearings in behalf of the United States. I therefore ask that, if possible, the district attorney be so instructed by telegraph, direct from your Department, and Agent McCormick advised in the same manner.

Very respectfully,

H. L. MULDROW,
Acting Secretary.

Hon. A. H. GARLAND,
Attorney-General.

PORTLAND, OREGON, *August* 25, 1885.

DEAR SIR: I herewith inclose my account against the United States for services in thirty cases before the register and receiver of the Oregon City land office.

Yours, respectfully,

NEWTON MCCOY.

Hon. A. H. GARLAND,
Attorney-General of the United States, Washington, D. C.

The United States, Dr. to Newton McCoy.

For services for the United States as counsel at hearings before the register and receiver of the United States land office at Oregon City, Oregon, in the following cases:

1885.

June 15. U. S. *v.* A. J. Dygert, 2 days .....
17. U. S. *v.* H. M. Riggs, 2 days .....
19. U. S. *v.* Wm. H. Markell, 2 days .....
22. U. S. *v.* Clarence B. Riggs, 2 days .....
24. U. S. *v.* Alfred Burr, 2 days .....
26. U. S. *v.* Walter F. Jones, 2 days .....
29. U. S. *v.* I. H. Taffe, 2 days .....
July 1. U. S. *v.* Donald Mackenzie, 2 days .....
6. U. S. *v.* E. C. Masten, 2 days .....
8. U. S. *v.* F. P. Finnegan, 2 days .....
10. U. S. *v.* Wm. J. Walker, 2 days .....
27. U. S. *v.* Falk Steinhardt, 2 days .....
29. U. S. *v.* H. C. Doty, 2 days .....
31. U. S. *v.* J. C. Havely, 1 day .....
Aug. 1. U. S. *v.* Harry R. Lewis, 1 day .....
3. U. S. *v.* C. H. Menssdorffer, 1 day .....
4. U. S. *v.* John Clark, 1 day .....
5. U. S. *v.* C. T. Prehn, 1 day .....
6. U. S. *v.* Fred. W. Prehn, 1 day .....
7. U. S. *v.* J. B. Sheehy, 1 day .....
10. U. S. *v.* A. B. Graham, 1 day .....
11. U. S. *v.* A. S. Nichols, 1½ days .....
12. U. S. *v.* Taubenheimer, 1 day .....
13. U. S. *v.* Edwin Kemera, 1 day .....
14. U. S. *v.* David F. Dryden, 1 day .....
15. U. S. *v.* Thomas E. Richet, ½ day .....
17. U. S. *v.* Thomas Guineau, 1 day .....
19. U. S. *v.* Geo. E. White, 2 days .....
20. U. S. *v.* H. R. Alden, 1 day .....
Mileage from Portland to Oregon City and return, distance 30 miles (round trip), for 20 days .....

Total amount due .....

TE OF OREGON,
County of Multnomah, ss:

Newton McCoy, being first duly sworn, say that I was employed by the United tes district attorney for the district of Oregon to take charge of the above cases; t I performed the services as set forth in the foregoing account; that said services reasonably worth the sum of $440; and that I traveled the distance above stated necessary travel during the performance of my duties as counsel in said cases.

NEWTON MCCOY.

ubscribed and sworn to before me this 24th day of August, 1885.

SEAL.] P. A. MARQUAM, JR.,
Notary Public in and for the State of Oregon.

OREGON CITY, OREGON, *August* 22, 1885.

hereby certify that Newton McCoy was engaged as counsel, and that he performed service as above set forth, and that his services are reasonably worth the amount rged.

JAS. A. MCCORMICK,
Special Agent General Land Office.

PORTLAND, OREGON, *March* 15, 1886.

IR: Newton McCoy, of this city, has heretofore presented to you an itemized ement of account, $560, for legal services rendered the United States in the con- t of hearings before the register and receiver of Oregon City, Oregon, land-office, certain alleged fraudulent timber-land entries, and said account is unadjusted.

have been requested to present to you a brief statement of the facts upon which McCoy's claim is founded, and this is intended as such.

Upon reports of investigations made by me the honorable Commissioner General nd Office, ordered hearings to be had before local office at Oregon City to deter- ne the validity of thirty-three entries under the act of June 3, 1878, involving ne $13,000, or 5,280 acres.

Those hearings commenced on June 8, 1885. It was my duty to present the testi- ny and evidence on the part of the Government. Before the trials began it was imated to me that the defendants had employed able counsel, and would contest cases into the Supreme Court, if necessary.

n that event it appeared to me that the interests of the United States could best guarded, from first to last stage of the proceedings, if the district attorney, or ne one authorized by him, should take charge. Acting immediately on this w, I telegraphed the honorable Commissioner on June 2, 1885, in these words: Hearings in thirty-three timber-land entries begin at Oregon City on 8th instant. rties interested have employed eminent counsel. I ask that the United States dis- ct attorney be detailed to assist me, or that I be authorized to employ special coun- at expense not exceeding $300. Answer. Oregon City, Oregon."

received no answer to this telegram, but instead, did receive from yourself, on ne 5, 1885, a telegram stating that the district attorney had been by you instructed take charge of the cases, etc.

About the same time District Attorney J. F. Watson was instructed by you (see egram June 5), to take charge, and advising him that instructions were sent by il. Those instructions arrived to him on June 18. Meantime the cases had been ng on five days without the assistance of the district attorney or anybody else. m convinced that it was impossible for the district attorney personally to attend, ing to the presence of other important business, and so Mr. McCoy was retained deputized, and took charge of the cases from June 15 until they were finished, Au- st 21, as certified in his bill of particulars.

f action was delayed to await clearer and more definite instructions than your d telegram and letter of June 5 at least twenty days would pass without the assist- e asked for.

Mr. McCoy earned the amount submitted to you for approval, and in a spirit of ity ought to be paid.

Very respectfully,

JAS. A. MCCORMICK,
Special Agent General Land Office.

The ATTORNEY-GENERAL OF THE UNITED STATES.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 74.

UNITED STATES MARSHAL OF ALASKA.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Attorney-General of an appropriation to pay Barton Atkins, United States marshal of Alaska, for expense of guarding the Chinese quarters in Juneau, Alaska.

JANUARY 13, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 12, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General, of the 10th instant, submitting for an appropriation the account of Barton Atkins, United States marshal for the district of Alaska, for expense of guarding the Chinese quarters in Juneau, Alaska, to protect them from threatened violence; there being no funds at the disposal of the Attorney-General available for the purpose.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, January 10, 1888.

SIR: Herewith inclosed are copies of letters from Barton Atkins, United States marshal for the district of Alaska, and of an account of $40 for guarding the Chinese quarters in Juneau to protect them from violations. The Chinese who were laborers were threatened with assault, and, upon the order of the court, the marshal incurred the expense above mentioned for their protection.

Copies are also inclosed of the certificate of Governor Swineford and Judge Dawson bearing upon the matter.

They are submitted to you for presentation to Congress at its present session for such action as it may think proper, this Department having no fund out of which such expenses can be paid.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

DISTRICT OF ALASKA, OFFICE OF UNITED STATES MARSHAL,
Sitka, June 21, 1887.

SIR: In reference to your letter inclosing voucher for explanation for expenditure for "guarding Chinese, $40," I respectfully report that a number of Chinese laborers were quartered in a small building at Juneau, and that at night, while they were asleep therein, a dynamite bomb was thrown against the building by parties unknown, nearly demolishing the same, and temporarily injuring and greatly frightening the occupants.

The following morning a threatening warning made in writing was found posted about the town that "unless the Chinamen left the place at once their lives would be taken." The citizens of the place raised a fund by subscription, offering $1,000 for the detection and arrest of the perpetrators. The frightened laborers appealed to me for protection, which I granted, furnishing them shelter and a competent man to guard them at night from further molestation, until means were afforded them to leave the place.

The weather was inclement, and in view of the action then being taken for the protection of the Chinese in Washington Territory by the Government, I considered my action justifiable in the premises.

The whole matter was explained to the judge and district attorney in open court when the account was examined and approved.

Very respectfully, your obedient servant,

BARTON ATKINS,
United States Marshal.

Hon. A. H. GARLAND,
Attorney-General, Washington, D. C.

United States to Thomas J. McCully, Dr.

1886.
Jan. 28. For ten nights' services as watchman at the Chinamen's quarters to protect them from the dynamiters $40.00

Received from Barton Atkins, United States marshal, $40 in full of the above account.

THOMAS J. MCCULLY.

JUNEAU, ALASKA, *February* 1, 1886.

In the United States district court for the district of Alaska.

The United States marshal, Barton Atkins, having presented in open court an account for $40, on account of expenses incurred in guarding Chinamen from mob violence at Juneau, Alaska, in January, 1886, the same is hereby approved as an extraordinary expense, as assented to by the district attorney.

LAFAYETTE DAWSON,
District Judge.

THE UNITED STATES OF AMERICA,
District of Alaska, ss:

I, H. E. Hayden, clerk of the United States district court for the district of Alaska, do hereby certify that the foregoing copy of the order of the court, made on the 20th day of September, 1887, has been by me compared with the original, and that it is a

correct transcript therefrom, and of the whole of such original, as the same appears of record at my office and in my custody.

In testimony whereof I have hereunto set my hand and affixed the seal of said court at Sitka, in said district, this 21st day of September, 1887.

[SEAL.] H. E. HAYDEN, *Clerk.*
By A. A. MOYER, *Deputy Clerk.*

DISTRICT OF ALASKA, OFFICE OF UNITED STATES MARSHAL,
Sitka, ——— ——, 188–.

SIR: Referring to Department letter, October 12, ultimo (H. H. file No. 980–1884–L. M. B.), I have the honor to report that the judge, district attorney, and clerk, not being at the time the expense was incurred either in office or in the Territory, decline to make affidavit or statement concerning the matter. The inclosed affidavit of the governor is all the evidence in my power to furnish showing the necessity of the expenditure.

Very respectfully, your obedient servant,

BARTON ATKINS,
United States Marshal.

Hon. A. H. GARLAND,
Attorney-General, Washington, D. C.

This is to certify that in January, 1886, there was imminent danger of a riot at Juneau, Alaska, involving great danger of bloodshed and destruction of property; that the citizens called for and urgently demanded protection at the hands of the civil authorities; that in response to such call and demand myself and the marshal went by the first ship to that place, where we found that a house occupied by six or eight Chinamen had been blown up with dynamite, and that a committee of safety had been organized, the citizens being in constant fear of further acts of violence. At my request the United States marshal placed a special deputy in charge of a number of watchmen appointed by the committee of safety; that said special deputy was kept on duty for a period of ten days, and that in my opinion his services were actually necessary and imperatively demanded in the interest of peace and good order. I further certify that neither the present judge, clerk, or United States attorney were then officers of the Territory, and therefore can not certify to the facts herein set forth.

A. P. SWINEFORD,
Governor of Alaska.

DISTRICT OF ALASKA, *ss:*

A. P. Swineford, being duly sworn, deposes and says that he is now, and has been ever since the 15th of September, 1885, governor of Alaska, and that the facts set forth in the foregoing statement are true of his own personal knowledge.

Subscribed and sworn to before me this 12th day of December, 1887.

LAFAYETTE DAWSON,
District Judge.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 75.

COMPENSATION OF ROBERT F. ARNOLD FOR PROSECUTING CRIMINALS IN TEXAS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

An estimate from the Attorney-General of an appropriation to pay Robert F. Arnold for services in the prosecution of mail robbers in the district court at Graham, Tex.

JANUARY 13, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 12, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Attorney-General of the 7th instant, submitting for an appropriation the account of Robert F. Arnold, for services in the case of the United States *vs.* Robert Settle, John Oxford, and Sam Ravenscraft, mail robbers, in the district court at Graham, Tex., $1,000, there being no funds at the disposal of the Attorney-General available for the purpose.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF JUSTICE,
Washington, January 7, 1888.

SIR: Herewith is inclosed copies of correspondence in relation to the payment of a fee of $1,000 charged by Robert F. Arnold for services rendered in the case of the United States against Settle, Oxford, and Ravenscraft, mail robbers, in the district court at Graham, Tex., to wit: Letter of November 30, 1887, from Inspector John E. Hollingsworth; of December 10, 1887, from United States Attorney C. B. Pearre, and of December 12, 1887, from the same district attorney in relation to the claim, together with a copy of the claim with certificates of the district attorney and district judge, and a copy of a letter of December 30, 1887,

from Attorney Pearre asking for the submission of the account to Congress for such action as it shall take.

It is forwarded to you that the same may be submitted to Congress in compliance with this request, there being no authority in this Department for the payment.

Very respectfully,

A. H. GARLAND,
Attorney-General.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF JUSTICE,
Sherman, Tex., November 30, 1887.

DEAR SIR: At the October term of the United States district court at Graham, in the trial of John Houston, John Oxford, Robert Settle, and Sam Ravenscraft, who were indicted at the last March term of the court for participation in the train robbery at Gordon on January 25, 1887, the attorneys for Oxford, Settle and Ravenscraft, asked a severance in the trial from Houston, which was granted, and counsel appointed for Houston by the court. Then, at the request of the United States district attorney, Houston was put on trial first, his trial consuming four days, and the jury rendered a verdict of "not guilty" in his case. These cover the trial of Oxford, Settle, and Ravenscraft, who were represented by three able attorneys, and the court had previously allowed these three defendants 67 witnesses, at the expense of the Government, to testify in their behalf, though only about 50 of these witnesses were put on the stand and examined in the trial. There were in all about 107 witnesses in the case, about 90 of whom were examined in the trial. The case consumed about seven and a half or nearly eight days in trial, and the jury returned a verdict of "not guilty" in their case. These parties were ably defended by three good attorneys.

At the commencement of this trial United States District Attorney C. B. Pearre, esq., asked R. F. Arnold, esq., an attorney of good standing and ability at Graham, to assist in prosecuting the case, which Mr. Arnold did, and although this trial resulted in an acquittal of the defendants, the prosecution appeared to me ably and diligently conducted. I believe that the Hon. C. B. Pearre, district attorney, and Hon. A. P. McCormick, district judge, have recommended that a fee be paid Mr. Arnold by the Government for assisting in this prosecution.

When this trial came up, from the great number of witnesses and able attorneys of the defendants, it appeared to me that the district attorney was placed at a great disadvantage, and that the labor necessary to be performed by the prosecution was more than the district attorney, or any one man, could well properly perform, and I would recommend that a fee be paid to Mr. B. F. Arnold for his services in the case.

Yours, respectfully,

H. C. HOLCOMBE,
Post-Office Inspector.

Mr. JNO. E. HOLLINGSWORTH,
Inspector in Charge, Austin, Tex.

AUSTIN, TEX., *December* 10, 1887.

Major PEARRE:

Please note instructions of chief inspector and take such steps as you see proper.

I would suggest for Mr. Arnold to make his fee quite reasonable, something like your fee would have been under the same circumstances. I would like to confer with you in person, but can not at this time.

JNO. E. HOLLINGSWORTH,
Inspector in Charge.

DEPARTMENT OF JUSTICE,
Waco, Tex., December 10, 1887.

SIR: I have the honor to acknowledge receipt of your esteemed favor of 1st ultimo (marginals "H H"). Your communication covers an account of Robert F. Arnold for $1,000, indorsed on which is a certificate of mine recommending the payment of the same; in which certificate I state that I requested Mr. Arnold to assist me in the prosecution of Settle, Oxford, and Sam Ravenscraft, who were charged by indictment in the district court at Graham, Tex., with robbing the mail carrier on January 23, 1887.

Your letter points out to me the sections of the Revised Statutes controlling the appointment of assistant counsel.

I must frankly admit that I find from an examination of the statutes that I had no authority in law to request Mr. Arnold or any one else to assist me; and I regret that I did not think to inform myself upon the subject before doing so. The case was forced to trial out of its regular order on the docket, to my surprise, and without reflection or examination, and upon the spur of the moment, I requested Mr. Arnold, who was sitting by, to assist me. Such has been the universal practice in the State courts. I named the fact to the court and he approved of it; so did the post-office inspector, who had assisted in collecting evidence in the case. I was thoroughly convinced from the evidence that the defendants were guilty, and knew that there was a very strong combination on the part of the defendants and their friends to defeat the ends of public justice. I was exceedingly anxious that the defendants should be convicted. These were my motives for what I did, and the statement of the facts is the only apology I can make for my error.

You ask me to state whether Mr. Arnold took the oath of office as assistant attorney in accordance with section 366, Revised Statutes. Mr. Arnold was not sworn at all.

You state further in your letter, "Your attention is directed to these sections (363, 365, and 366, Revised Statutes) that a statement may be made how the Department can comply with the sections, approve the account, and secure its payment." After such investigation of the matter as I have been able to make I am forced to the conclusion that the Department can not "approve the account and secure its payment."

As soon as this court is over I shall send you a full report of the Gordon train robbery cases.

Would you regard it as unlawful or improper in me to compensate Mr. Arnold out of my private funds for the services he rendered in the case?

Yours, respectfully,

CHARLES B. PEARRE,
United States Attorney.

The ATTORNEY-GENERAL,
Washington, D. C.

DEPARTMENT OF JUSTICE,
Waco, Tex., December 12, 1887.

SIR: I am just in receipt of a communication from John E. Hollingsworth, post-office inspector in charge at Austin, Tex., inclosing communication from chief post-office inspector at Washington, D. C., and also inclosing letter from H. C. Holcombe, post-office inspector, addressed to Mr. Hollingsworth, and by him forwarded to Mr. West, and by Mr. West returned to Hollingsworth with this indorsement:

"HOLLINGSWORTH:

"You will confer with United States District Attorney Pearre, and if approved, let this lawyer make out his claim—a reasonable fee. Let the district attorney state his views as to the amount and send to me, and I will see that the claim receives proper consideration. Return Holcombe's report with the claim.

"WEST."

Inclosed please find copy of Holcombe's letter.

Since receiving your communication of the 1st ultimo, concerning the matter of Mr. Arnold's account, I find that it would be improper in me to make any suggestions whatever in reference to Mr. Arnold's account without instructions or directions from you, and will make none unless so directed.

I beg leave to state, however, that if there be any legal way by which the Department can compensate Mr. Arnold for his services, it should be done. In this I know you will concur.

Very respectfully,

CHARLES B. PEARRE,
United States Attorney.

The ATTORNEY-GENERAL,
Washington, D. C.

The United States to Robert F. Arnold, Dr.

1887.

Nov. 10. To services in assisting the United States district attorney for the northern district of Texas in prosecuting cause No. 185 (United States *v.* Robert Settle, John Oxford, and Sam Ravenscraft), in United States district court at Graham, charged with robbing the mail-carrier of the United States at Gordon, Tex., on January 23, 1887 ..... $1,000

ROBERT F. ARNOLD,
Attorney at Law.

I certify that I requested Robert F. Arnold, esq., a distinguished lawyer of the Graham bar, to assist me in prosecuting Settle, Oxford, and Sam Ravenscraft, charged by indictment in the United States district court at Graham, Tex., with robbing the mail-car at Gordon, Tex., and that in selecting Mr. Arnold I had the approval of the court, and the post-office inspector who was present and assisting in the prosecution. I can state that the case was one of great importance, and that Mr. Arnold rendered valuable services to the Government.

The case was very ably defended by three able counsel.

The trial of the case commenced on the 27th day of October and was concluded late in the evening of the 3d of November, 1887.

There were one hundred and seven witnesses summoned in the case and nearly all of said witnesses examined before the court and jury.

I most respectfully recommend that the Government allow Mr. Arnold the sum of $1,000 for his services.

Respectfully,

CHARLES B. PEARRE,
United States Attorney.

I cordially and earnestly approve this account. The case was one in which any district attorney would need assistance. Mr. Arnold ably assisted. By any standard known to good lawyers $1,000 is a reasonable fee for the service performed.

A. P. MCCORMICK,
United States District Judge.

DEPARTMENT OF JUSTICE,
Waco, Tex., December 30, 1887.

SIR: Your esteemed communication of the 20th ultimo (marginals H H.) is received. I forwarded Mr. Arnold a copy of your letter in which you kindly suggested that the Department will forward Mr. Arnold's account for services rendered the Government in the train-robbery cases, through the Secretary of the Treasury, to Congress, for such action as it shall take. A letter from Mr. Arnold, of date December 27, 1887, informs me that he is anxious that his account should take that course. I herewith inclose the account, and will be glad if you will forward it as suggested in your letter.

Yours, respectfully,

CHARLES B. PEARRE,
United States Attorney, N. D. Texas.

The ATTORNEY-GENERAL,
Washington, D. C.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 76.

UNITED STATES CONSUL, PHILIPPINE ISLANDS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

With inclosures, an estimate from the Secretary of State for salary of the consul of the United States at Manila, Philippine Islands, and for clerk hire at the same post.

JANUARY 13, 1888.—Referred to the Committee on Foreign Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 12, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of State, of the 7th instant, and its inclosures, in regard to the inadequacy of the salary of the consul of the United States at Manila, Philippine Islands, and of the allowance for clerk-hire at that post.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF STATE,
Washington, January 7, 1888.

SIR: I have the honor to send you inclosed a copy of dispatch No. 185 from the late consul of the United States at Manila, Philippine Islands, in regard to the inadequacy of the salary and clerk-hire allowance at that post, viz: $2,000 and $400, respectively.

Manila is one of the most important consulates in the East, and the cost of living there is very high. The duties of the consul are similar to those of the consul-general at Havana, and it is very unjust that he should not be better paid. I therefore strongly recommend that the salary be raised to $3,500, and that an allowance of $1,200 be appropriated for clerk-hire, and respectfully request you to bring the matter to the attention of Congress.

I have the honor to be, sir, your obedient servant,

T. F. BAYARD.

The SECRETARY OF THE TREASURY.

No. 185.

UNITED STATES CONSULATE,
Manila, September 14, 1887.

SIR: In response to your No. 92 (circular letter) of 8th June, allowing $400 clerk hire to this office, the same reasons given in my No. 73 still prevent my availing thereof.

To procure even an Indian who really would be of use, I should have to pay $800 to $1,000 here; while a European clerk, the only one I would accept, hardly would engage at the salary I myself receive.

The native Mr. Youngs employed in this consulate at about $500, and who being left altogether in charge, Mr. Youngs enjoying a lucrative position as clerk elsewhere, and regarding consular duties as of secondary importance, said native being of the average Indian stupidity, did not fail to bring to pass various complications, eliciting at times some very lively correspondence. That would never do for me; and I believe I can manage the post very well by myself. But what I will more strenuously beg to recommend to your serious consideration is to provide for your consul at this post sufficient pay as to enable him to live, if not in comfort, in such decency, at least, as his position and rank require. And the latter being equal to a captain's in our Navy, a colonel's in our Army, ought to be salaried here at no less than $4,000, and then will be equivalent only to $1,300 pay to those officers if stationed at New York, and out of which to board and clothe themselves; not calculating a reduction of $200 to $300 for traveling expenses I had to defray above allowance in getting to my post.

On the $2,000 at present doled out, and it is less than the meanest shop-keeper in Manila would offer his clerk, I have to live in a hired room and alcove, both furnished, down to the bedding, out of my own means, as both boarding and furnished lodgings are unknown contrivances here; and the street I have to live in is full of Chinese, the house chock full of Indians, none of the better class. Of course I am thus compelled to shun society, and never in these years have shown myself at any reception or party, as my brother consuls are in the habit of doing; yet am I always treated deferentially, though not ignorant that I am looked upon, especially by Spaniards, who do not understand the case at all, as an object of curiosity.

You may imagine how dear living results here, when even a cabbage or a potato has to be imported from China, etc., to rot very fast in this hot-house climate, where the thermometer rarely goes below 80 degrees even at night. And my consulate has as much to attend to as the British, and twice as much as all the others lumped together; and how they are paid and situated will appear from the annexed copy of a letter addressed on this very subject by the acting consul, Mr. Tucker, in 1883. I noted at the time that the Singapore consulate was raised in 1885 from $2,500 to $3,500, the Hong-Kong from $4,000 to $5,000; that is in the first instance as much as $5,000, and with latter $8,000 equivalent in Manila. I therefore think your Department, by kindly laying the matter before the President, might succeed in obtaining, as a pressing necessity, a sufficient increase in the emoluments for this important consulship, which it would not be amiss to make a general one, in the Philippines, to enable its incumbent, no matter who, to hold up his head among his fellows and to lead the life of a gentleman.

To do so requires a little house; and rents, owing to earthquakes, are very dear with us here, say $1,200 per annum, to which add another like

sum for furnishing, and perhaps $1,600 for living expenses per year; this climate necessitating generous food, etc. These rates are cheap.

I have the honor to be, sir, your obedient servant,

JULIUS G. VOIGT,
Consul.

Hon. JAS. D. PORTER,
Assistant Secretary of State, Washington.

No. 123.] UNITED STATES CONSULATE,
Manila, July 14, 1883.

SIR: I have the honor to acknowledge receipt of your letter No. 6, of 9th May, and beg to reply to both questions given in the dispatch from the Department of State (circular dated Washington, 28th March, 1883).

(1) Both the present consulates, viz, Manila and Cebu (the latter a consular agency), are of importance. Iloilo is not a subordinate consulate, and understands directly with the Department.

(2 and 3) I see no reason for changing the existing offices, and the only modification would be an increase of salary for the Manila consul, the present one being entirely inadequate to allow the incumbent to live decently without engaging in trade.

(4) The consul at Manila should be a man of experience and tact, in order to enable him to treat with the Spanish authorities; and he should write and speak the language. He should have a salary of at least $5,000 per annum, and an extra sum for rent of office and clerk-hire. The following sums are paid to consuls of first-class powers residing at this port, and whose duties are, with the exception of Her Britannic Majesty's consul, less arduous than those of the representative of the United States:

Her Britannic Majesty's consul (£1,600)	$8,000
German consul	6,000
French consul	6,000
Belgian consul	6,000

Besides, there are vice-consuls and chancellors and extra pay for office expenses.

The following gentlemen, representatives of the smaller powers, receive no salary, but are allowed to retain the fees, which amount to a mere trifle. These gentlemen are merchants, and the office gives them a certain standing here, and very little work: Denmark, Sweden and Norway, Austria, Holland, Russia, and Switzerland.

(5) The assistant of this consulate has $40 per month, which is small pay considering the amount of work done. He is a native, but a very efficient clerk, and has served this consulate for many years. No European or American could exist on such small pay.

(6) The duties of the consul are such as devolve on consuls generally in ports of importance, visited by so many ships, and embrace quite as much work as those of England, Germany, and France. I may add that I am a member of the oldest and only American house here—Peele, Hubbell & Co.—and have had thirty-two years' experience of these islands, and only took charge until some suitable person could be sent out.

Mr. Sharp has never arrived here, and the only other appointed consul from home, Mr. Hebbins, remained here two days, having made up his mind that it would be simply impossible to live here on the salary allowed.

I have already told the Department that this being a very important port I hoped they would send out a suitable person, with salary sufficient to enable him to live decently and honestly.

I remain, sir, your obedient servant,

R. D. TUCKER,
Acting Consul.

D. T. REED, Esq.,
Chargé d'Affaires ad interim, Madrid.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 77.

URGENT POSTAL DEFICIENCIES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Estimates of deficiencies in appropriations for the postal service for the fiscal years 1887 *and* 1888.

JANUARY 16, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 13, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, estimates of deficiencies in appropriations for the postal service for the fiscal years ending June 30, 1887–'88, payable from the postal revenues for those years, amounting to $150,572.63, submitted by the Postmaster-General with the request that they be included in the urgent deficiency bill under consideration by the Committee on Appropriations.

Respectfully, yours,

C. S. FAIRCHILD, *Secretary.*

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

URGENT DEFICIENCIES.

Estimates of appropriations required for the service of the fiscal years ending June 30, 1887 *and* 1888, *by the Post-Office Department (out of the postal revenues).*

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
Letter balances, scales, and test-weights:			
Letter balances, scales, and test-weights, being a deficiency (estimated) for the fiscal year 1888 (March 3, 1887; vol. 24, p. 569, sec. 1)	.....	$7,000.00	$10 000.00
NOTE.—In relation to this estimate see Appendix.			
Wrapping paper:			
Bulkley, Raiguel & Co.: For balance remaining due on account of 1,500 reams of wrapping paper furnished per order of the Postmaster-General, dated May 10, 1887 (June 30, 1886; vol. 24, p. 91, sec. 1)	.....	2,165.77	000.00

Estimates of appropriations required for the service, etc.—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
Adhesive postage and special-delivery stamps:			
American Bank Note Company: For balance remaining due on account of postage-stamps during the fiscal year ended June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	.....	$6,884.45	$116,700.00
Stamped envelopes, newspaper wrappers, and letter-sheets:			
United States Sealed Postal Card Company: For 421,563 letter-sheet envelopes, at $2.85 per 1,000 furnished during the quarter ended June 30, 1887 (June, 30, 1886; vol. 24, p. 92, sec. 1)	$1,201.45	.....	.....
The Morgan Envelope Company and the Plimpton Manufacturing Company: For balance remaining due on account of stamped envelopes furnished during the fiscal year ended June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	64,036.33	65,237.78	583,500.00
Registered package, tag, official and dead-letter envelopes:			
The Morgan Envelope Company, and the Plimpton Manufacturing Company: For balance remaining due on account of official envelopes furnished during the fiscal year ended June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	.....	17,813.49	67,200.00
Foreign mail transportation:			
North German Lloyd of Bremen (June 30, 1886; vol. 24, p. 92, sec. 1)—			
For transporting the United States mails from New York to Great Britain and Ireland to Germany, and for countries beyond, via Great Britain and Germany, twenty-six outward trips from April 2 to June 29, 1887, inclusive, per order of the Postmaster-General, No. 13899, dated August 9, 1887 ..... $32,161.34			
Less amount of warrant No. 7056 on assistant treasurer at New York, dated October 28, 1887 .... 4,950.85	27,201.49	.....	.....
Cunard Steamship Company (Limited): For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	4,438.89	.....	.....
North German Lloyd of Bremen: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	10,838.39	.....	.....
White Star Line: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p 92, sec. 1)	2,815.73	.....	.....
Clyde Line: For transporting foreign closed mails from the United States to and via Turk's Islands, from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	16.74	.....	.....
Quebec Steamship Company: For transporting foreign closed mails from the United States to and via Bermuda, from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	27.83	.....	.....
Dominican Line: For transporting foreign closed mails from the United States to Turk's Islands, from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	13.32	.....	.....
New York and Jamaica Line: For transporting foreign closed mails from the United States to and via Jamaica, from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	19.19	.....	.....
Pacific Mail Steamship Company: For transporting foreign closed mails from the United States to and via the United States of Colombia from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	12.45	.....	.....
United States and Brazil Mail Steamship Company: For transporting foreign closed mails from the United States to and via Brazil and to the West Indies and Brazil from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	7.24		

Estimates of appropriations required for the service, etc.—Continued.

Detailed objects of expenditure, and explanations.	Estimated amount which will be required for each detailed object of expenditure.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
Foreign mail transportation—continued.			
Steamer *Haytien Republic*: For transporting foreign closed mails from the United States to Turk's Islands from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	$16.49		
Steamer *Lorenzo D. Baker*: For transporting foreign closed mails from the United States to Turk's Islands during the quarter ended December 31, 1886 (June 30, 1886; vol. 24, p. 92, sec. 1)	1.57		
Williams and Rankine Line: For transporting foreign closed mails from the United States to Bermuda and British Honduras from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	37.71		
Steamer *Blanche Henderson*: For transporting foreign closed mails from the United States to Bermuda from July 1, 1886, to December 31, 1886 (June 30, 1886; vol. 24, p. 92, sec. 1)	16.06		
Steamer *Alert*: For transporting foreign closed mails from the United States to Turk's Islands from January 1 to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	10.36		
Atlantic and West India Line: For transporting foreign closed mails from the United States to and via the West Indies during the fiscal year ended June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	1.32		
New York and Cuba Mail Line: For transporting foreign closed mails from the United States to and via the Bahamas from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	380.32		
Red D Line: For transporting foreign closed mails from the United States to and via Curaçoa from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	53.88		
Atlas Steamship Company: For transporting foreign closed mails from the United States to and via Jamaica from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	18.30		
Liverpool and Great Western Steam Company: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	3,318.50		
Hamburg American Packet Company: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	275.30		
National Line: For transporting foreign closed mails from the United States to Europe from July 1 to December 31, 1886 (June 30, 1886; vol. 24, p. 92, sec. 1)	370.83		
Inman Line: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to March 31, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	276.36		
Anchor Line: For transporting foreign closed mails from the United States to Europe from July 1, 1886, to June 30, 1887 (June 30, 1886; vol. 24, p. 92, sec. 1)	1,302.87		
Total foreign mail transportation fiscal year 1887		$51,471.14	$375,000.00
Total Post-Office Department, postal service		150,572.63	1,182,400.00

APPENDIX.

In relation to the estimate "Letter-balances, scales, and test-weights, $7,000." (*See page* 1.)

POST OFFICE DEPARTMENT, OFFICE OF THE POSTMASTER-GENERAL,
Washington, D. C., January 13, 1888.

SIR: I have the honor to submit herewith to you, to be transmitted to Congress, in accordance with the requirements of section 2 of the act of July 7, 1884 (23 Stat., 254), an estimate of the deficiency in the appropriation made in the act of March 3, 1887, for the service of the Post-Office Department for the fiscal year ending June 30,

1888, in the item "for letter-balances, scales, and test-weights," amounting to $7.000. And herewith accompanying is a letter of the First Assistant Postmaster-General, in which the occasion and necessity for the appropriation are presented, as well as the necessity for urgency in making the provision, which I ask may also be transmitted so as to enable early consideration by the Congress.

I have the honor to be, very respectfully, your obedient servant,

WM. F. VILAS,
Postmaster-General.

The SECRETARY OF THE TREASURY.

POST-OFFICE DEPARTMENT,
OFFICE FIRST ASSISTANT POSTMASTER-GENERAL,
DIVISION OF POST-OFFICE SUPPLIES,
Washington, D. C., January 12, 1888.

SIR: I desire to call your attention to the immediate necessity of a further appropriation for letter balances, scales, and test weights to meet the urgent demands of the service for furnishing scales to post-offices. Under the present appropriation, the sum of $10,000, which was available for this purpose, was, on December 1, 1887, entirely exhausted. The reason for this large demand upon the appropriation during the first five months of the fiscal year ending November 30, 1887, arises from the following fact: When the contracts were made in July 1886, as there remained on hand from the previous year's stock 1,755 8-ounce balances, which where considered sufficient to carry the Department through the fiscal year, no contract was made for this item. It was found, however, before the end of the third quarter, that the 1,755 balances had been issued, and before the end of the fiscal year orders had accumulated to the number of 903. As it was not thought advisable to purchase these balances on an exigency order, the accumulated requisitions were held over, and have been supplied from the contract for the fiscal year ending June 30, 1888. In addition to this, the general inspection of fourth-class offices has very largely increased the demands for 8-ounce and 4-pound balances. The inspectors found many offices unsupplied, postmasters not knowing that letter balances would be furnished them upon application to the Department. Owing to the above reasons, the average issue of scales for the five months ended November 30, 1887, was 122 per week. Using this as a basis, there is required to complete the seven months remaining of the fiscal year ending June 30, 1888, 2,199 8-ounce and 542 4-pound balances, and 92 62-pound scales, which, in order to meet the requirements of the service, must be obtained through the means of an exigency appropriation. This involves an actual expenditure of $6,909.01. The scales required can be purchased of the present contractors at the contract prices for the present fiscal year, to wit:

	Each.
8-ounce balances	$2.65
4-pound balances	1.59
62-pound scales	2.39
240-pound scales	2.79
600-pound scales	6.99

The above prices are very advantageous to the Department. I would therefore request that an appropriation be asked for to the amount of $7,000, to meet the requirements of the service for the balance of the fiscal year ending June 30, 1888.

Very respectfully,

A. E. STEVENSON,
First Assistant Postmaster-General.

Hon. WM. F. VILAS,
Postmaster-General.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 78.

DEFICIENCIES CONTINGENT EXPENSES, TREASURY DEPARTMENT.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

SUBMITTING

An estimate of appropriation to supply deficiency for "contingent expenses Treasury Department; freight, telegrams, etc.," current fiscal year.

JANUARY 16, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 13, 1888.

SIR: I have the honor to transmit herewith copy of a communication from the chief clerk of this Department submitting an estimate of $2,000 to supply a deficiency in the appropriation for "contingent expenses Treasury Department; freight, telegrams, etc.," for the current fiscal, with the request that the same be included in the urgent deficiency bill under consideration by the Committee on Appropriations.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 11, 1888.

SIR: I have the honor to call attention to the appropriation for contingent expenses Treasury Department, freight, telegrams, etc., for 1888, and to suggest that an additional estimate be submitted to Congress for the sum of $2,000 to meet an anticipated deficiency therein.

The business of the United States Treasurer's office requires an expenditure of nearly $300 per month for telegrams, which was not included in the estimates for the current fiscal year, as it has been made necessary by the regulations recently adopted relating to deposits with

national bank depositaries, and which is the sole cause of the present reduced condition of the appropriation in question.

Unless additional funds be provided this office will be without means to meet its current expenses for freight, expressage, and telephone service, as the balance remaining to the credit of the appropriation is now only about $860 out of an appropriation of $3,500.

This matter would have been included among the items submitted to you with my letter of the 8th ultimo, but for the fact that I was advised of the probable decrease of business which necessitates the large expenditure for telegrams by the Treasurer of the United States.

This, however, is not apparent at the present time, and I therefore bring the subject to your attention with the suggestion that special action be taken to lay it before Congress at an early date.

Respectfully, yours,

E. B. YOUMANS,
Chief Clerk.

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 79.

IMPORTATION OF OPIUM.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

SUBMITTING

A draught and recommending the passage of a bill to prohibit the importation of opium in certain forms.

JANUARY 16, 1888.—Referred to the Committee on Ways and Means and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 12, 1888.

SIR: Under existing law the importation of opium containing less than 9 per cent. of morphia is prohibited. Such opium may however be re-exported under the provisions of section 2937 of the Revised Statutes. The practical effect of this law is to induce the clandestine introduction of the drug in this form for use in the preparation of smoking opium.

It is assumed that the object of the law in prohibiting the importation of opium in that condition was to prevent its use for the purpose mentioned, it being understood that smoking opium is chiefly prepared from the drug below the standard of purity named. In order to make this prohibition effective the privilege of re-exportation should be withdrawn.

This prohibition should, in my opinion, be extended to opium prepared for smoking, on which the rate of duty was increased by the tariff act of 1883 from $6 to $10 per pound, presumably with the object of restricting its importation and use. Such has not, however, been the effect of the law, which has served rather to stimulate smuggling, extensively practiced by systematic organizations on the Pacific coast. Recently completed facilities for transcontinental transportation have enabled the opium smugglers to extend their illicit traffic to our northern border. Although all possible efforts have been made by this Department to suppress this traffic, it is found practically impossible to do so.

In view of these facts I have deemed it advisable to submit for the consideration of Congress the inclosed draught of a bill to prohibit the importation of opium in the forms mentioned, and providing for its summary seizure wherever found in the United States.

If, however, Congress is not disposed to prohibit or restrict the importation of opium for smoking, and desires to obtain revenue therefrom, the tax should be materially reduced so that the inducement to smuggling and attendant difficulties and expense of administering the law may be lessened.

Respectfully,

C. S. FAIRCHILD,
Secretary.

Hon. JOHN G. CARLISLE,
Speaker of the House of Representatives.

A BILL to prohibit the importation of opium in certain forms, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the importation of opium containing less than 9 per cent. of morphia and of opium prepared for smoking, be, and the same is hereby, prohibited; and all such opium shall, upon importation, be seized and proceeded against for forfeiture and condemnation. All opium containing less than 9 per cent. of morphia and all opium prepared for smoking, whenever found in the United States, shall be subject to seizure, and shall be condemned and destroyed unless the claimant thereto shall show to the satisfaction of the court that the same was lawfully imported, or was prepared from opium lawfully imported: *Provided,* That officers of the United States, by whom opium may be seized under the provisions of this act, and persons giving information leading to such seizures, shall receive such compensation, upon the condemnation of the opium so seized, as the Secretary of the Treasury may direct, to be paid from the appropriation for the prevention and detection of frauds upon the customs revenue. The whole amount of such compensation shall not, however, exceed in any case one-half of the appraised value of the opium seized and condemned: *And provided further,* That the Secretary of the Treasury is hereby authorized to prescribe suitable regulations for the enforcement of this act.

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50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 80.

DUTY ON LITHOGRAPHIC PRINTS.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

A communication from the counsel of the Manufacturing Lithographers' Association of the United States, in relation to the duty on lithographic prints.

JANUARY 16, 1888.—Referred to the Committee on Ways and Means and ordered to be printed.

TREASURY DEPARTMENT,
OFFICE OF THE SECRETARY,
Washington, D. C., January 14, 1888.

SIR: I have the honor to transmit herewith, for the information of Congress, a communication dated the 12th instant, addressed to this Department by Mr. E. S. Hatch, representing the Manufacturing Lithographers' Association of the United States, asking that lithographic prints be specially enumerated in the tariff at a duty of 50 per centum ad valorem.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

Hon. J. G. CARLISLE,
Speaker of the House of Representatives.

NEW YORK, *January* 12, 1888.

SIR: In the matter of probable tariff legislation affecting the importation of lithographic matter, I have to suggest as follows:

These matters are not specifically classified in the present tariff act. The failure to so classify has given rise to litigation, the result of which has been to hamper domestic manufacturers.

I have reason to believe that there is pending before the Committee of Ways and Means of the House of Representatives a proposition to classify in one list books, including illustrated books and blank books of all kinds, pamphlets and engravings, bound and unbound, and all printed matter not specifically provided for in the act, lithographs, chromos, photographs, etchings, maps, and charts.

The Manufacturing Lithographers' Association of the United States, and many thousands of workmen, as evidenced by their signatures on a petition to Congress, with a view of extending the scope of domestic manufacture, desire instead of the foregoing the following classification: Lithographic prints on either stone or zinc, bound or unbound, and articles produced either in whole or in part by lithographic process, 50 per centum ad valorem.

This would only contemplate striking out of the general classification above mentioned "lithographs, chromos."

Very respectfully,

E. S. HATCH,
Counsel to the Association.

Hon. CHARLES S. FAIRCHILD,
Secretary of the Treasury, Washington.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 81.

COAL DEPOSITS, CROW INDIAN RESERVATION.

LETTER

FROM

THE SECRETARY OF THE TREASURY

TRANSMITTING

Estimates from the Secretary of the Interior of an appropriation for opening and developing the coal deposits on the Crow Indian Reservation in Montana.

JANUARY 16, 1888.—Referred to the Committee on Indian Affairs and ordered to be printed.

TREASURY DEPARTMENT,
January 13, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, copy of a communication from the Secretary of the Interior of the 11th instant, and its inclosures, submitting an estimate of appropriation for $3,000 for opening and developing the coal deposits on the Crow Indian Reservation in Montana.

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

DEPARTMENT OF THE INTERIOR,
Washington, January 11, 1888.

SIR: In accordance with the provisions of section 4 of the act of July 7, 1884 (23 Stat., 254), I have the honor to inclose herewith, for presentation to Congress, copy of a letter of 10th instant from the Commissioner of Indian Affairs, presenting in duplicate, in connection with other papers, a report of Lieutenant Biddle, of the Corps of Engineers of the U. S. Army, of an examination of the coal fields in the vicinity of Fort Custer, Mont., on the Crow Indian Reservation, with draught of an estimate of appropriation in the sum of $3,000, to be expended under the direction of the Secretary of the Interior in opening and developing the coal deposits and repairing road leading thereto on the Crow Reservation in the Territory of Montana, which the Commissioner recom-

mends may, if practicable, be inserted in the Indian appropriation bill for the ensuing fiscal year.

The matter has the approval of this Department.

I have the honor to be, very respectfully,

H. L. MULDROW,
Acting Secretary.

The SECRETARY OF THE TREASURY.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, January 10, 1888.

SIR: I am in receipt, by Department reference, of a letter dated the 28th ultimo, from the Acting Secretary of War, transmitting a copy of a report of an examination made by First Lieut. John Biddle, Corps of Engineers, U. S. Army, in conjunction with Special Agent Howard, of the coal-fields in the vicinity of Fort Custer, Mont., on the Crow Indian Reservation, which were the subject of office reports to the Department, dated August 3 and September 8 last, respectively, copies of which are herewith inclosed.

From Lieutenant Biddle's report it appears that at a point on the reservation, 5 miles southeast of the Indian Department farm-house, 2 miles above Grass Lodge Creek, and at a distance from the agency of about 30 miles, and from Fort Custer of about 41 miles, a vein of coal of considerable thickness crops out.

From the various outcroppings in the vicinity the quantity of coal would seem to be very great.

It is not suitable for blacksmithing purposes, but is a fairly good coal, well adapted for fuel, and as good and better than a great deal of the coal burned at various points in the Northwest.

It is now being used to good advantage at the agency in range and wood stoves.

The coal vein is located about 5 miles from the stage road. A good and not difficult road could be made over this 5 miles by building three or four small bridges and doing some small cutting down of hills and filling.

The stage and freight road would be much improved by cutting down hills at the river crossings and other places and building three or four small bridges at the creeks.

When this is done the cost of hauling to Fort Custer would not exceed $6 or $7 dollars a ton.

Lieutenant Biddle concludes his report by recommending an appropriation of $3,000 to put the road in repair and open the vein of coal.

In office report to the Department of the 3d of August last, attention was drawn to the scarcity of timber on the Crow Reservation, and the yearly increasing difficulty of obtaining a supply of fuel for the use of the agency, the military at Fort Custer, and the Indians, except at very great labor and expense.

It is anticipated that the development of this coal vein will afford an abundant supply of excellent fuel for all parties, at a less cost than wood, and be a saving to the Government in many respects.

I have therefore prepared, and herewith submit, the draught of an estimate for an appropriation of $3,000, for the purposes stated in Lieutenant Biddle's report, and have the honor to recommend that it

be transmitted to Congress with a request for its insertion (if practicable) in the Indian appropriation bill for the ensuing fiscal year.

Duplicate copies of Lieutenant Biddle's report are also herewith inclosed for the information of Congress.

Very respectfully, your obedient servant,

J. D. C. ATKINS,
Commissioner.

The SECRETARY OF THE INTERIOR.

For this amount, to be expended under the direction of the Secretary of the Interior, in opening and developing coal deposits, and repairing roads leading thereto, on the Crow Reservation in the Territory of Montana..... $3,000

WAR DEPARTMENT,
Washington City, December 28, 1887.

SIR: I have the honor to acknowledge the receipt of your letter of the 9th of September last, with its inclosures, relative to the opening of the coal bed upon the Crow Indian Reservation in Montana, for the use of the reservation and of Fort Custer, and requesting that an Army officer be detailed to co-operate with Special Indian Agent Howard in making an examination of the coal bed with a view of reporting, for submission to Congress, an estimate of the funds necessary to develop the same.

In reply I beg to state that, in accordance with your request, First Lieut. John Biddle, Corps of Engineers, was detailed for the duty indicated, and, in conjunction with Special Agent Howard, he has made an examination of the coal-fields in the vicinity of Fort Custer, Mont. I inclose a copy of his report, dated the 5th instant, from which it will be seen that he considered the coal contained in the beds satisfactory fuel, but not good for blacksmithing, and estimates the cost of putting the road leading to the coal beds in repair, and opening the vein of coal, at $3,000, after which the estimated cost of hauling the coal to Fort Custer would not exceed $6 or $7 a ton.

Very respectfully, your obedient servant,

R. MACFEELY,
Acting Secretary of War.

The SECRETARY OF THE INTERIOR.

[Copy of indorsements on letter of the Acting Secretary of the Interior to the Secretary of War, of September 9, 1887, requesting that a competent officer of the Army may be detailed to co-operate with Special Agent Howard, of the Interior Department, in making a thorough examination of the coal bed upon the Crow Indian Reservation in Montana.]

First indorsement.

HEADQUARTERS OF THE ARMY, ADJUTANT-GENERAL'S OFFICE,
Washington, September 12, 1887.

Official copy respectfully furnished the commanding general Department of Dakota, through headquarters Division of the Missouri, in order that he may take the necessary action in compliance with request of the Secretary of the Interior.

By command of Lieutenant-General Sheridan.

R. C. DRUM,
Adjutant-General.

Second indorsement.

SAINT PAUL, MINN., *September* 19, 1887.

Official copy respectfully referred by the commanding general to First Lieut. John Biddle, Corps of Engineers, chief engineer officer Department of Dakota, who will perform the duty as required by the Lieutenant-General.

The commanding officer Fort Custer has been instructed to furnish the necessary transportation.

THOMAS M. VINCENT,
Assistant Adjutant-General.

Third indorsement.

HEADQUARTERS DEPARTMENT OF DAKOTA, CHIEF ENGINEER'S OFFICE,
Saint Paul, Minn., December 6, 1887.

Respectfully returned to the Assistant Adjutant-General.

In obedience to orders I made examination of coal bed in conjunction with Special Agent Howard, and a report thereof is appended.

JOHN BIDDLE,
First Lieut. Corps of Engineers, Chief Engineer Officer, Department of Dakota.

HEADQUARTERS DEPARTMENT OF DAKOTA, CHIEF ENGINEER'S OFFICE,
Saint Paul, Minn., December 5, 1887.

SIR: I have the honor to make the following report with reference to coal lands in the vicinity of Fort Custer, Mont., as ordered by indorsement dated Headquarters Department of Dakota, Saint Paul, Minn., September 19, 1887.

This order was received while in the vicinity of the Crow Indian Agency, Mont.

After consultation with Special Agent Howard, as directed, we visited the coal vein described by Special Agents Walker and Howard in their report to the Commissioner of Indian Affairs dated November 22, 1886.

This bed is thick and extensive. It is still on fire in several places and the coal, to a depth of at least 10 feet, is soft and crumbling and when brought to the atmosphere rapidly disintegrates.

Information about another vein discovered by one of the assistant farmers, and said to be better fuel and more accessible, led us to give up the first one.

The latter vein was visited, but on account of lack of facilities could not be thoroughly examined at that time.

After the late trouble with the Crow Indians was settled, I obtained from the commanding officer of Fort Custer, General N. A. M. Dudley, colonel First Cavalry, a detachment of five men, with picks and shovels. The vein was then thoroughly examined. Also another vein about 4 miles distant, discovered by an Indian named Flathead Woman, and reputed very fine and accessible, was examined but was found to be shaly and useless as a fuel.

The former vein crops out at various places over a line of about a mile in length, but principally upon a stretch of hillside a hundred yards long, scattered along which are a number of large pieces of petrified wood. At this latter place a hole was dug to the bottom of the vein and about 6 feet in the hillside to a point where the earth covering was about 4 feet thick. Samples were taken from various parts of the seam for trial.

The coal was taken to the agency and to Fort Custer, where it was tried by the blacksmith in a forge, in wood stoves, and in a large kitchen range.

The coal is a brown coal. It is very hard in the seam, being with difficulty chipped off with a pick, and in one place we used a small quantity of powder. It is black at first, but turns brown on surface and seams when exposed to atmosphere. It can be obtained in large chunks—liable, however, to scale off in flat pieces when handled or transported.

There is considerable ash and a sulphur smell when burning. The coal burns readily with a yellow flame and considerable heat.

With a grate or coal stove it would, I think, be a very satisfactory fuel. It is not good for blacksmithing.

In all it is a fairly good coal, and as good and better than a great deal of the coal burned at various points in the Northwest. It is now being used to good advantage at the agency in range and wood stoves.

The vein where we opened it is about 4 feet thick. The top is shaly and would make a fair roofing. There is some little water, but the facilities for drainage are excellent.

From the various outcroppings in the vicinity the quantity of fuel would seem very great. The location is 5 miles southeast of the Indian department farm house, 2 miles above Grass Lodge Creek. It is 3 miles from the Little Big Horn River, and one-half mile from a small tributary called Owl or Ash Creek. Cotton-wood in fair quantities can be obtained from the latter for roofing or other purposes.

The distance to the Indian agency is about 30 miles and to Fort Custer about 41. Of this 5 miles is from the vein to the stage road and the remainder along the stage road. The first part could be made a good and not difficult road by building three or four small bridges and doing some small cutting down of hills and filling.

The stage and freight road would be much improved by cutting down hills at the river crossings and other places, and building three or four small bridges at the creeks.

After this is done the cost of hauling to Fort Custer would not exceed $6 or $7 a ton.

To put the road in repair and open the vein of coal I recommend an appropriation of $3,000.

Very respectfully, your obedient servant,

JOHN BIDDLE,
First Lieut. Corps of Engineers, Chief Engineer Officer, Department of Dakota.

The ADJUTANT-GENERAL, DEPARTMENT OF DAKOTA,
Saint Paul, Minn.

[First indorsement.]

HEADQUARTERS DEPARTMENT OF DAKOTA,
Saint Paul, Minn., December 14, 1887.

Respectfully forwarded through the headquarters Division of the Missouri, in connection with reference from the headquarters of the Army, by indorsement of September 12, 1887.

THOS. H. RUGER,
Brigadier-General Commanding.

[Second indorsement.

HEADQUARTERS DIVISION OF THE MISSOURI,
Chicago, December 17, 1887.

Respectfully forwarded to the Adjutant-General of the Army.

ALFRED H. TERRY,
Major-General Commanding.

DEPARTMENT OF THE INTERIOR, OFFICE OF INDIAN AFFAIRS,
Washington, August 3, 1887.

SIR: I have the honor to acknowledge the receipt, by Department reference, of a letter from the Acting Secretary of War, dated the 18th June last, inclosing copy of correspondence had between United States Indian Agent Williamson and the military authorities, on the subject of cutting timber on the Crow Reservation for the purpose of supplying fuel to Fort Custer, Mont., and (in accordance with the suggestion of the commanding general of the Department of Dakota, thereon indorsed) requesting permission to cut dead wood, not exceeding 2,500 cords, to be taken from the Pine Ridge, indicated on the accompanying map.

I am also in receipt, by like reference, of a further communication from the honorable Secretary of War, dated 29th June last, on the same subject.

Agent Williamson having been directed by this office to make a full report in the premises, I am now in receipt of his reply, dated 7th ultimo (copy inclosed), from which I extract the following:

"While it may be a fact that much dead and fallen timber can be obtained from the said Pine Ridge, yet the necessities of the Crow Indians will not admit of the disposal of any wood, either dead and fallen, or standing and growing, for any purposes whatsoever, save for building purposes—for cabins, stables, fencing, etc., and for fuel for the Crow tribe, and what may be necessary for use at the agency. In such an important matter as is now under consideration the present necessities or the requirements of a few years to come of this tribe form but a slight factor in the premises. The very limited amount of timber on the reservation must be husbanded in each and every respect most carefully to meet the demands of a tribe progressing as rapidly as are the Crows in the direction of civilization. The supply of timber, as I have already informed the honorable Commissioner, and repeatedly informed the authorities at Fort Custer, is wholly inadequate for the improvements of the Indian farms, and for necessary fuel not a stick can be spared; far too much has already been used by the military, and to allow any more to be used for any purpose not redounding to the particular and immediate benefit of the Indians, would be an act of injustice and

wrong to the Indians wholly beyond compensation possible on part of the Government.

In regard to the statement of the department commander that there are several thousand cords of dead wood in the Pine Ridge of no present use to the Indians, and the danger of its rotting before it can be utilized for their benefit, Agent Williamson states that there are very many allotments on the Big Horn and other streams very insufficiently supplied with timber either for buildings or fuel, and that the Indians residing on such allotments will at a comparatively early day be compelled to obtain any and all timber, whether for improvements or fuel, from this same Pine Ridge and the dead timber thereon will not have an opportunity to rot.

The agent further states that a large number of Indian families will have to obtain their fuel from the Pine Ridge, either wholly or in part, within from three to five or six years, and that when the extremely severe weather of the long winters is taken into consideration, necessitating the use of an immense quantity of fuel by every family, it will be seen that the dead wood referred to is not at all in excess of the requirements of the tribe.

He also refers to the existence of a coal bed on the reservation, about 20 miles southeast of the agency, which if opened will afford an abundant supply of excellent fuel for the post and the agency, at a less cost than wood; and he suggests that some joint action be taken by both Departments for the proper development of the mine. In this way the vexed question of fuel supply may be permanently settled. It appears that last winter the agent was compelled to haul fuel from 12 to 20 miles, and another season they will have to haul 20 to 30 miles. He doubts whether with present force and teams an adequate supply of fuel can be obtained for another winter.

I deem the suggestions of Agent Williamson in regard to the coal bed worthy of the most serious consideration, and although I am not now prepared, without further investigation, to make any specific recommendation on the subject, I would suggest that the attention of the War Department be especially called to it, in the hope that by the combined action of the two Departments some means may be devised by which the coal can be utilized for the benefit of both branches of the service and of the Indians.

Whilst I am fully sensible of the necessities of the military arm of the service, and under ordinary circumstances should feel concluded by existing regulations of the Department touching the right of the military to take the necessary supply of wood for fuel from the reservation in common with the Indians and the Indian service, I regret to say that I do not see how, in the light of Agent Williamson's report, this office can, consistently with a due regard for the interests of the Crow Indians, favor the present application of the War Department.

The papers are herewith returned.

Very respectfully, your obedient servant,

A. B. UPSHAW,
Acting Commissioner.

The SECRETARY OF THE INTERIOR.

DEPARTMENT OF THE INTERIOR,
OFFICE OF INDIAN AFFAIRS,
Washington, September 8, 1887.

SIR: Referring to my report of the 3d ultimo, suggesting that the attention of the War Department be called to the existence of a valuable coal bed on the Crow Reservation, Montana, near the agency, in the hope that by combined action of the two Departments some means may be devised by which the coal can be utilized for the benefit of both branches of the service and of the Indians; also to the inclosed letter, dated 30th ultimo, from the Acting Secretary of War, stating that the lieutenant-general of the Army recommends that "this coal bed being under the control of the Indian Department, that Department open it or authorize it to be opened, so that the post of Fort Custer may be supplied with fuel from it," I have the honor to recommend that the honorable Secretary of War be requested to cause a competent engineer officer to be detailed to co-operate with Special Agent J. R. Howard, now on duty on the reservation, in making a thorough examination of the coal bed in question and report thereon, with a view to submitting an estimate to the coming Congress for the necessary funds to develop the same.

Pertinent to this recommendation, and as having an intelligent bearing on the subject, I inclose herewith a copy of a report made to this office by Special Agents Walker and Howard, November 22, 1886.

I respectfully ask that this office be advised of the action had by the War Department, should the recommendation meet your approval.

Very respectfully, your obedient servant,

J. D. C. ATKINS,
Commissioner.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 82.

NAVY DEPARTMENT EMPLOYÉS.

LETTER

FROM

THE SECRETARY OF THE NAVY,

TRANSMITTING

A list of employés in that Department, showing their compensation and the time actually employed, and stating that they have been usefully employed, and that the services of all are required for the prompt dispatch of business.

JANUARY 16, 1888.—Referred to the Committee on Expenditures in the Navy Department and ordered to be printed.

NAVY DEPARTMENT,
Washington, January 12, 1888.

SIR: In compliance with section 194 of the Revised Statutes, I have the honor to submit herewith a report showing the names of the "clerks and other persons" who were employed in the Navy Department during the calendar year 1887; also the time each was actually employed, and the sum paid to each.

These persons have been usefully employed, and the number is not in excess of that required for the prompt dispatch of the public business.

All embraced in the list were provided for by appropriations made in the legislative, executive, and judicial act.

Very respectfully,

W. C. WHITNEY,
Secretary of the Navy.

Hon. JOHN G. CARLISLE,
Speaker of the House of Representatives.

List of clerks and other employés of the Navy Department during the calendar year 1887, the time each was employed, and the sum paid to each.

Name.	Position.	Time employed.	Amount paid.
Secretary's Office.			
John H. Hogg	Chief clerk	Whole year	$2,500.00
F. H. Stickney	Disbursing clerk	do	2,250.00
William P. Moran	Fourth-class clerk	do	1,800.00
W. S. McNairy	do	do	1,800.00
Jesse E. Dow	do	do	1,800.00
H. S. Bowen	do	do	1,800.00
M. S. Thompson	do	do	1,800.00
B. W. Hanna	do	do	1,800.00
John D. O'Connor	Stenographer	do	1,600.00
J. E. Potts	Third-class clerk	do	1,600.00
Wythe Denby	do	do	1,600.00
R. T. Cheyney	do	do	1,600.00
R. B. Porter	Second-class clerk	do	1,400.00
C. H. Ridenour	do	do	1,400.00
M. L. Croxall	do	do	1,400.00
W. L. Barrington	do	January 1 to September 30	1,050.00
W. R. Handy	do	October 1 to December 31	350.00
Edson C. Brace	Stenographer	Whole year	1,400.00
John Cassin	First-class clerk	do	1,200.00
J. H. Kirkwood	do	do	1,200.00
Daniel R. Neal, jr	do	do	1,200.00
J. W. Anderson	do	do	1,200.00
James E. Dulin	do	January 1 to March 26	268.37
F. M. Hosier	do	May 23 to December 31	728.55
Miss M. M. Heath	do	Ten months and seventeen days.*	1,043.51
Jno. M. Williamson	do	January 1 to August 1, inclusive.	704.35
Pickens Neagle	do	October 8 to December 31	277.15
J. E. Trudeau	Clerk at $1,000	Whole year	1,000.00
E. S. Cassin	do	do	1,000.00
William Wirt	do	do	1,000.00
Rufus Prentice	do	January 1 to September 30	750.00
Daniel H. Shea	do	December 16 to 31, inclusive	43.45
Mrs. M. Thompson	Telegraph operator	Whole year	1,000.00
P. T. McCurdy	Carpenter	do	900.00
Lindsay Muse	Messenger	do	840.00
William Pierre	do	do	840.00
W. R. Browne	Assistant messenger	do	720.00
John McCann	do	do	720.00
Henry Wiggenton	do	do	720.00
William M. Ellis	do	January 1 to April 30	228.30
Charles A. Dunn	do	May 1 to December 31	480.70
Do	Laborer	January 1 to April 30	219.40
Charles R. Barker	do	May 1 to December 31	440.60
William Wilkes	do	Whole year	660.00
John M. Evans	do	do	660.00
H. L. Sprague	do	do	660.00
James B. Allen	Messenger boy	Eleven months	384.00
Charles R. Barker	Messenger boy	January 1 to April 30	120.00
George W. Warner	do	November 4 to December 31	60.20
W. C. Mason	Telegraph boy	Whole year	240.00
Total			50,509.73
Bureau of Yards and Docks.			
A. E. Merritt	Chief clerk	Whole year	1,800.00
George Mackay	Draughtsman	do	1,800.00
S. Henriques	Fourth-class clerk	do	1,800.00
R. H. Yeatman	Third-class clerk	do	1,600.00
Charles Fair	Second-class clerk	do	1,400.00
J. R. Graham	First-class clerk	do	1,200.00
J. A. Kingsley	Clerk	do	1,000.00
Nathan Addison	Assistant messenger	do	720.00
Frederick Mason	Laborer	do	660.00
Total			11,980.00
Bureau of Equipment and Recruiting.			
A. W. Fletcher	Chief clerk	Whole year	1,800.00
W. W. S. Dyre	Fourth-class clerk	do	1,800.00
James Patterson	Third-class clerk	do	1,600.00
D. C. Morrison	Second-class clerk	do	1,400.00

* Balance of year on leave without pay.

List of clerks and other employés of the Navy Department, etc.—Continued.

Name.	Position.	Time employed.	Amount paid.
Hydrographic Office—Cont'd.			
B. Leach	Draughtsman	One month	$124.80
C. E. Birch	Engraver	Whole year	1,800.00
J. A. Waddey	do	do	1,600.00
V. L. Ourdan	do	do	1,500.00
J. L. Hazzard	do	do	1,400.00
C. A. Kolb	do	do	1,250.00
W. P. Sefton	do	do	1,250.00
H. E. Gasch	do	do	650.00
R. H. Gaskins	do	do	641.30
Charles La Hayne	Plate printer	Seven months	911.40
Thomas Devine	do	Whole year	1,252.00
W. F. B. Wall	do	Seven months and twenty-three days.	776.10
R. W. Johnson	do	do	779.60
C. A. Stephenson	do	do	779.60
W. H. Wilson	Assistant messenger	do	720.00
John A. Gordon	Watchman	do	720.00
George J. Beanes	Laborer	do	660.00
Joseph N. Mayne	do	do	660.00
Lincoln Brown	do	do	660.00
Henry Johnson	do	do	660.00
Charles B. Wise	do	do	660.00
Robert Adams	do	One month and fifteen days.	84.30
William M. Ellis	do	Eight months	440.60
M. W. Fernandez	Office attendant	Six months	210.00
Do	Printer's apprentice	Five months	207.90
Total			43,664.16
Nautical Almanac Office.			
E. J. Loomis	Assistant	Whole year	1,600.00
G. W. Hill	do	*Eleven months and twenty-three days.	1,565.22
J. Morrison	do	Whole year	1,600.00
R. W. Prentiss	do	do	1,400.00
C. Keith	do	do	1,400.00
S. J. Corrigan	do	Six months	600.00
D. Barcroft	do	do	600.00
J. O. Wiessner	do	Whole year	1,200.00
H. Meier	do	do	1,200.00
W. Anhagen	do	do	1,000.00
H. B. Hedrick	do	do	1,000.00
Mrs. M. B. Chase	Copyist and type-writer	Eleven months and twenty days.	873.10
Mrs. M. Chase Lohr	do	Eleven days	26.90
J. C. Hart	Assistant messenger	Whole year	720.00
G. W. Smith	Laborer	do	660.00
Total			15,445.22
Naval Observatory.			
A. N. Skinner	Assistant astronomer	Whole year	2,000.00
William C. Winlock	do	do	1,800.00
H. M. Paul	do	do	1,800.00
Thomas Harrison	Fourth-class clerk	do	1,800.00
William F. Gardner	Instrument maker	do	1,500.00
Dennis Horigan	Watchman	do	720.00
Nicholas Cahill	do	do	720.00
William Henderson	do	do	720.00
James Burns	do	do	720.00
George Watt	Skilled laborer	do	1,000.00
George Anderson	do	do	720.00
James Kelley	Laborer	do	660.00
William D. Horigan	do	do	660.00
Thomas K. Simpson	do	do	660.00
Samuel W. Watson	do	do	660.00
William H. Malvin	do	do	660.00
John Lamkin	do	do	660.00
Henry Clay	do	do	660.00
Total			18,120.00

* Eight days' leave without pay.

List of clerks and other employés of the Navy Department, etc.—Continued.

Name.	Position.	Time employed.	Amount paid.
Bureau of Provisions and Clothing—Continued.			
W. H. Doe	Third-class clerk	Whole year	$1,600.00
T. J. Lasier	do	Six months and fifteen days.	865.22
H. E. Quinn	Second-class clerk	*Eleven months and twenty-six days.	1,320.77
W. R. Handy	do	January 1 to September 30	1,050.00
W. L. Barrington	do	October 1 to December 31	350.00
Epes Sargent	First-class clerk	Whole year	1,200.00
Mortimer Clarke	do	do	1,200.00
Mrs. A. B. Bromwell	do	do	1,200.00
D. J. Evans	do	do	1,200.00
William Lucas	Copyist	do	900.00
John A. Morgan	Assistant messenger	do	720.00
Samuel H. West	Laborer	do	600.00
Total			15,817.19
Bureau of Medicine and Surgery.			
Charles T. Earle	Chief clerk	Whole year	1,800.00
Benjamin White	Third-class clerk	do	1,600.00
W. S. Gibson	Second-class clerk	do	1,400.00
Miss M. A. Austin	First-class clerk	Whole year	1,200.00
Wilmer Worth	Clerk	do	1,000.00
Wm. W. Trail	Assistant messenger	January 1 to December 26	710.29
Douglas Stewart Grant	do	December 27 to 31	9.77
Brook Shaw	Laborer	Whole year	600.00
Raife Hunter	Janitor	do	600.00
Augustus Valentine	Laborer	do	480.00
Total			8,400.06
Office of the Judge-Advocate General.			
W. F. Clarke	Fourth-class clerk	Whole year	1,800.00
C. L. Kelsey	Third-class clerk	do	1,600.00
Halleck Donohoe	First-class clerk	do	1,200.00
B. F. Peters	do	do	1,200.00
Randolph Green	Laborer	do	600.00
Total			6,400.00
Office of the Naval War Records.			
Robert H. Woods	First-class clerk	January 17 to December 31	1,145.00
Miss S. W. Mechlin	Copyist	Whole year	720.00
Frisbey G. Elker	do	January 1 to July 31	420.00
Robert E. Logan	do	August 1 to December 31	200.00
Total			2,585.00
Hydrographic Office.			
John S. Stodder	Second-class clerk	Whole year	1,400.00
Everett Hayden	do	Six months and sixteen days.	761.54
Miss A. C. Vogel	First-class clerk	Whole year	1,200.00
Miss V. G. Smith	Copyist	do	900.00
G. Herrle	Draughtsman	do	1,800.00
G. W. Littlehales	do	do	1,600.00
E. E. Court	do	do	1,500.00
C. P. Bolles	do	do	1,500.00
H. G. Brewer	do	do	1,450.00
A. C. Roberts	do	do	1,400.00
Max Franke	do	do	1,400.00
Leon Desses	do	do	1,400.00
C. F. Petersen	do	do	1,400.00
W. R. Hesselbach	do	do	1,300.00
W. M. Whiting	do	do	1,291.40
Miss E. A. Scott	do	do	900.00
Miss M. M. Smith	do	*Eleven months and twenty-six days.	887.00
Ross E. Gray	do	Whole year	600.00
F. S. O'Leary	do	Six months and twenty-four days.	565.00

* Five days' leave without pay.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 83.

TONAWANDA HARBOR AND NIAGARA RIVER, NEW YORK.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examination and survey of Tonawanda Harbor and Niagara River, New York, between Black Rock and Tonawanda.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 13, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 10th instant from the Chief of Engineers, with a copy of a report from Capt. F. A. Mahan, Corps of Engineers, giving the results of a survey of Tonawanda Harbor and Niagara River, New York, between Black Rock and Tonawanda, and also a copy of a report on the preliminary examination of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 10, 1888.

SIR: I have the honor to submit herewith a copy of a report to this office from Capt. F. A. Mahan, Corps of Engineers, giving the results of a survey of Tonawanda Harbor and Niagara River, New York, between Black Rock and Tonawanda, with a view to a 16-foot channel, made to comply with the requirements of the river and harbor act of August 5, 1886, together with a copy of the report on the preliminary examination of the same as therein provided.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

HON. WM. C. ENDICOTT,
Secretary of War.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 83.

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Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 10, 1888.

SIR: I have the honor to submit herewith a copy of a report to this office from Capt. F. A. Mahan, Corps of Engineers, giving the results of a survey of Tonawanda Harbor and Niagara River, New York, between Black Rock and Tonawanda, with a view to a 16-foot channel, made to comply with the requirements of the river and harbor act of August 5, 1886, together with a copy of the report on the preliminary examination of the same as therein provided.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

HON. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF TONAWANDA HARBOR AND NIAGARA RIVER, NEW YORK, BETWEEN BLACK ROCK AND TONAWANDA, WITH A VIEW TO A SIXTEEN-FOOT CHANNEL.

UNITED STATES ENGINEER OFFICE,
Buffalo, N. Y., November 17, 1886.

SIR: Referring to your circular letter of September 27, 1886, and the river and harbor act of August 5, 1886, part of which is quoted in the letter, I have to report that at the request of the Hon. John Weber, M. C., I accompanied him to Tonawanda, and there met a number of the leading business men of the place. I went with them to make an examination of the harbor, and to see, so far as it was possible, the magnitude of the business interests there collected.

In this connection I would refer to the following documents already on file:

(1) Report of Major McFarland, dated January 17, 1881, with report of Assistant F. T. Hampton, dated November 18, 1880, published in the Report of Chief of Engineers for 1881, Part III.

(2) To indorsement of Major McFarland, dated February 20, 1882, on letter of T. S. Fassett, inclosing printed copy of memorial of Tonawanda Lumber Association to Congress relative to improvement of Niagara River, etc.

(3) To annual report of Major McFarland for the fiscal year ending June 30, 1882.

From these reports I gather that in Major McFarland's opinion the cost of improving the harbor of Tonawanda would be $15,000, and the cost of giving a 16-foot channel from Lake Erie to Tonawanda would be $30,000.

The river and harbor act of August 5, 1886, provides that the "local or detailed engineer shall report to said Chief of Engineers whether in his opinion said harbor or river is worthy of improvement, and shall state in such report fully and particularly the facts and reasons on which he bases such opinion, including the present and prospective demands of commerce." * * *

In accordance with this proviso I give it as my opinion that both the harbor of Tonawanda and the Niagara River are worthy of improvement so as to obtain a 16-foot channel.

I base this opinion on the commercial movement of the port of Tonawanda since 1873.

On the preceding page are the three lines representing the receipts (by lake only) of lumber, laths, and shingles for the thirteen years from 1873 to 1885, both inclusive.

All of this material had to reach Tonawanda by way of the Niagara River.

In 1885 there were received by lake, in addition to the above, about 30,000,000 of feet of timber.

The relative amounts of various kinds of wood are not given in the annual report of the Tonawanda Lumber Trade Association. Assuming its value to be only $12 per thousand feet, we have $5,983,356 as the value of the lumber alone received by lake during 1885.

For the present year I have been able, through the courtesy of Mr. T. S. Fassett, of Tonawanda, to obtain the following statistics up to November 12:

Received by lake:

Lumber	feet..	487,538,316
Round logs and timber	do..	25,500,000

Received by lake:		
Shingles	pieces..	49,521,000
Laths	do..	9,283,000
Posts	do..	18,646
Pickets	do..	469,400
Of the above there were imported from Canada:		
Lumber	feet..	32,534,996
Logs	do...	141,000
Pickets	pieces..	179,000

on which $56,204.64 of duties were collected.

There have been up to date 1,025 coastwise and 72 foreign clearances. The entries are five less than the clearances.

The total tonnage, domestic and foreign, entered, is 379,948 tons.

In addition to the above receipts by lake, there have been received by rail 10,500,000 feet (partly estimated).

The estimated value of receipts is $10,980,000.

I requested when I went to Tonawanda that the number of men and vessels, with the value of the latter, engaged in this trade be sent to me. The information has not yet been received.

It will be seen from the above that the port of Tonawanda is important, especially in the matter of lumber.

The right bank of the river from some distance above Tonawanda Island to the foot of navigation of the upper part of Niagara River is a continuous stretch of docks. On the island the banks are beginning to show many signs of occupancy. A railroad bridge across the channel has been begun. In a short time the entire island will probably be one wood-yard. The length of water front occupied by the docks is estimated at about 5 miles, and is daily receiving additions.

It is my belief that Tonawanda has by no means reached its highest point, and that the present demands of its trade are sufficient to justify the additional depth of water asked.

Very respectfully, your obedient servant,

F. A. MAHAN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SURVEY OF TONAWANDA HARBOR AND NIAGARA RIVER, NEW YORK, BETWEEN BLACK ROCK AND TONAWANDA, WITH A VIEW TO A SIXTEEN-FOOT CHANNEL.

UNITED STATES ENGINEER OFFICE,
Buffalo, N. Y., December 29, 1887.

SIR: I have to submit the following report of a survey made of the Niagara River between Tonawanda and Black Rock Harbor, New York, in compliance with the river and harbor act of August 5, 1886, together with estimates for making the improvement therein mentioned, viz, to obtain a 16-foot channel.

I understand a 16-foot channel to be one that can be navigated by vessels drawing 16 feet of water.

The limits of the survey are indefinite, as Black Rock lies along the Niagara River for more than a mile, and Tonawanda has a frontage on the same stream of more than 2 miles. I have included the total frontage at both places so far as the funds at my disposal would permit.

The distance by river between the two places is about 12 miles.

Tonawanda is essentially a lumber port. In the magnitude of this business it ranks next to Chicago. The receipts of timber and lumber

during the season of 1887 amount to 556,000,000 feet, board measure. This material is brought from every lumber-shipping point on the lakes.

The mode of transportation is by steam and towbarges, each steam-barge towing two to five consorts.

The improvement sought is for the benefit of this great trade.

The obstructions to navigation are—

(1) The reef at the entrance to the Niagara River off Black Rock Harbor.

(2) The bar at the head of Strawberry Island.

(3) A few gravel hummocks abreast of the lower end of Rattlesnake Island.

(4) Shoal water in the channel between Tonawanda and White's Island and the main-land and along the entire river front at Tonawanda.

These obstructions will be considered in order, but before doing so I must call attention to one point, viz., that for a vessel drawing 16 feet there should, in the case under consideration, be a depth of at least 18 feet in the channel in order to have the navigation safe. This is necessary, because in so swift a current as the Niagara River has at many points there must be at least 2 feet of water under the vessel's bottom to enable her to answer her helm promptly.

I will now consider the obstructions and the remedies necessary for each:

(1) *The reef at the entrance to Niagara River.*—This is a mass of rock forming the bed of the Niagara River. Its shape is very irregular. The depth varies from 3 to 18 or more feet. The current is swift, about 10.25 to 11.75 feet per second. Sheet 1* of the tracings show the state of the channel at this point.

The mode of towing requires a wide channel. The consorts are strung out one back of the other behind the towing barge. The distance of each vessel from the one in front is from 250 to 500 feet. A broad channel is necessary to handle the tow under such conditions. At the present time the tows are broken up at the mouth of the river. The towing barge, with sometimes one consort in tow (but frequently none at all), goes down the river if she is not drawing more than 12 to a maximum of 13 feet. The remaining consorts are taken in tow by harbor tugs, each tug taking a barge. The limit of draught for the consorts is the same as for the towing barge.

Bearing the length of the tow in mind (about 2,500 feet, including the vessels and the intervals between them) and the swiftness of the current, it is the opinion of reliable persons interested in the navigation of the Niagara River that the channel should be 400 feet wide. In this opinion I coincide.

The channel I propose is included between the broken lines AA and BB on sheet 1. As there might be questions of international jurisdiction arising from such work as this I have endeavored to keep all operations on ground which unquestionably belongs to the United States.

The broken line marked "boundary line" is the middle line of the main channel, *i. e.*, the line of greatest depth.

The line AA is drawn as nearly tangent as may be to the 18-foot curve on the Canada shore. The line BB is parallel thereto at a distance of 400 feet. The amount of material to be removed is 41,600 cubic yards, all rock. The estimated cost of taking this out by blasting and dredging will be, according to the best information obtainable from

* Omitted.

contractors here, $8 per cubic yard, which gives $332,800 as the total cost of clearing out a channel 400 feet wide with a uniform depth of 18 feet.

(2) *Bar at the head of Strawberry Island.*—This bar is wholly composed of gravel. For reasons stated above I have taken 400 feet as a proper width for a channel at this point (sheet 2*). It is included between the two broken lines. The amount of material to be removed is 164,200 cubic yards. The cost of taking it out at 35 cents a cubic yard will be $57,470.

(3) *A few gravel hummocks abreast of the lower end of Rattlesnake Island* (see sheet 3*).—These form so slight an obstruction that they may be disregarded. Their total volume is 3,600 cubic yards. To remove them at 35 cents per yard would cost $1,260.

Shoal water along the river front at Tonawanda (see sheet 4).—The material here is all gravel; 423,000 cubic yards have to be removed, costing, at 35 cents per yard, $148,050.

The total cost of the improvement will therefore be:

Channel at Horseshoe Reef	$332,800
Channel at head of Strawberry Island	57,470
River front at Tonawanda	148,050
	538,320
Hummocks at Rattlesnake Island, which may be disregarded	1,260
	539,580
Contingencies, 10 per cent	53,958
Total cost	593,538

Very respectfully, your obedient servant,

F. A. MAHAN,
Captain of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

*Omitted.

C

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 84.

OBEILS (OBEYS) RIVER, TENNESSEE, AND BEAR CREEK, MISSISSIPPI.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examinations and surveys of Obeils (Obeys) River, Tennessee, and Bear Creek, Mississippi.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 10, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 7th instant, from the Chief of Engineers, with copies of reports from Lieut. Col. J. W. Barlow, Corps of Engineers, giving the results of surveys of Obeils (Obeys) River, from the point where improvements have heretofore been made to the mouth of the West Fork Tennessee, and of Bear Creek, Mississippi, and also copies of the reports on the preliminary examinations of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 7, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Lieut. Col. J. W. Barlow, Corps of Engineers, giving the results of surveys of Obeils (Obeys) River, from the point where improvements have heretofore been made to the mouth of the West Fork Tennessee, and of Bear Creek, Mississippi, made under his direction to comply with the requirements of the river and harbor act of August

5, 1886, together with copies of the reports on the preliminary examinations of the same, as therein required.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF OBEIL'S [OBEY'S] RIVER FROM THE POINT WHERE IMPROVEMENTS HAVE HERETOFORE BEEN MADE TO THE MOUTH OF THE WEST FORK, TENNESSEE.

ENGINEER OFFICE, UNITED STATES ARMY,
Chattanooga, Tenn., December 16, 1886.

GENERAL: In compliance with letter dated Office Chief of Engineers, September 27, 1886, I have the honor to report that the "Obey's River from the point where improvements have heretofore been made to the mouth of the West Fork, Tennessee," is in my opinion "worthy of improvement," based upon the following reasons, viz:

(1) The Obey's River running through a section of Tennessee, notably destitute of railway facilities, is the natural and only available highway for the transportation of the heavy products of its valley to a market and the return of merchandise and supplies.

(2) That, though the work heretofore done did not extend above Barnes' Landing, the estimates and project of 1879 treating that point as the head of navigation, yet boats have ascended at favorable stages of the river to the Forks of Obey's, *i. e.*, the mouth of the West Fork.

(3) The section of river sought to be surveyed—about 15 miles—is of the same character generally as the lower 43 miles, for which appropriations have been made and expended; and if surveyed and improved would be only an extension of a work heretofore authorized by Congress, and would subserve the agricultural and timber interests of this region.

Should the Chief of Engineers direct the making of this survey, I would state that it will require about $250 to make the examination or survey, and to prepare a project, with estimate of cost, for the improvement which would then be under consideration.

Very respectfully, your obedient servant,

J. W. BARLOW,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

EXAMINATION OF OBEIL'S [OBEY'S] RIVER FROM THE POINT WHERE IMPROVEMENTS HAVE HERETOFORE BEEN MADE TO THE MOUTH OF THE WEST FORK, TENNESSEE.

ENGINEER'S OFFICE, UNITED STATES ARMY,
Chattanooga, Tenn, October 17, 1887.

SIR: In compliance with instructions of the Chief of Engineers, dated March 16, 1887, I have the honor to submit the following report on the examination of "Obeil's (Obey's) River, Tennessee, from the point where improvements have heretofore been made to the mouth of the West

Fork," made under the provisions of the river and harbor act approved August 5, 1886.

The Obey's River lies wholly in the State of Tennessee and is a tributary of the Cumberland River, which it enters near Celina, Tenn.

This stream from Barnes' Landing to the mouth of the West Fork, about 14 miles, is of the same character generally as the lower section, the channel being obstructed by gravel-bars, loose rocks, snags, and overhanging trees.

The project for the improvement of this river below Barnes' Landing was completed in September, 1883, since which time no work has been done in the channel.

The character of this stream is such that a small annual outlay is necessary to maintain the clear, navigable channel secured in 1883, and if any such work is provided for it would be advisable that the improvement be extended to the mouth of the West Fork, so as to facilitate the passage of rafts and flat-boats, at an additional estimated cost of about $5,000, which should be appropriated at one time, so that the money be made available for expenditure during a single working season.

The present demands of commerce, which are largely those of the log and lumber rafting interests, might be met by simply clearing the channel below Barnes' Landing of surface obstructions brought down by the floods of the past three years, but its prospective demands, based upon the large undeveloped coal measures lying along its upper waters, would indicate that this river is worthy of improvement at least to the mouth of the West Fork.

Any further appropriation for improving Obey's River, Tennessee, should be held, expressed or implied, as available for work upon that stream to the mouth of the West Fork, as far as the interests of commerce and navigation can be subserved.

The report of the assistant engineer, W. C. Crozer, is transmitted herewith.

Respectfully submitted.

J. W. BARLOW,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. W. C. CROZER, ASSISTANT ENGINEER.

BURNSIDE, KY., *June* 26, 1887.

COLONEL: In compliance with your instructions dated 10th instant, I have made an examination of Obey's River from the point where improvements have heretofore been made to the mouth of the West Fork.

The point designated as the mouth of the West Fork is commonly known as the "Forks of Obey's River;" from here to the mouth it is called Obey's River, while above, the tributaries are known as the East Fork and the West Fork. The East Fork is the larger of the two, being large enough 30 to 40 miles above to float rafts out.

At the Forks high water of 1859 was 34 feet above low water, and on March 7, 1887, it was 25 feet, while a rise of 20 feet is not at all uncommon, there being about an average of four such rises per annum.

The river at the time of the examination was about 8 inches above extreme low water, which was quite favorable for observing all of the obstructions, which consist of islands (which are only bars except in high water), overhanging trees, a few snags, loose rock, and fish-trap dams.

The river is about 150 feet wide, has considerable fall, and in high water must have a rapid current.

At present this portion of the river, and in fact all above the mouth of Wolf River, is used only for rafts of saw-logs and lumber, as many as sixty of which have been counted passing Barnes's Landing in one day. The steam-boats do not run above the mouth of Wolf River, none having gone as high as Barnes's Landing for eight or nine years.

Unless the mining and shipping of coal is begun, there is but little or no need of any improvement, as the rafts can be safely run in the present condition of the river. That the coal along this river would be mined and shipped if the navigation was improved there can be no doubt, as this is the nearest coal to Nashville, and with its superior quality and easy access to the river, and water transportation all the way to Nashville. it certainly is such an advantageous position for mining that capital will not let it lie idle much longer.

The following tabulated statement will show the position of the obstructions, what they are, and the proposed improvement:

The estimated cost of completing the work so far as to enable coal boats to pass out with safety, is as follows:

Dredging gravel, 2,250 cubic yards, at 75 cents	$1,687.50
Riprap dams, 750 cubic yards, at $2.50	1,875.00
Rock excavation, 40 cubic yards, at $1	40.00
Cutting overhanging trees and snags	250.00
	3,852.50
Contingencies, etc	500.00
Total	4,352.50

During the past year run-logs and lumber, valued at $60,000, have been shipped from above Barnes's Landing.

During the same period there has been shipped out of the entire river:

55,000 saw-logs, average value, each, $5	$275,000
Lumber, estimated value	50,000
400 hogsheads of tobacco, at $75	30,000
Wheat, corn, and other produce, probable value	75,000
Total	330,000

The estimate of cost of the work is on the presumption that the entire work will be done in one season.

Respectfully,

W. C. CROZER,
Assistant Engineer.

Obstructions and proposed improvement.

Location.	Distance from Forks of Obey's.	Length.	Least depth.	Fall.	Obstruction.	Improvement.	Quantities.
	Miles	*Feet.*	*Feet.*	*Feet.*			*Cubic yards.*
Eastport Island	0.06	150	1.25	3.0	Bar on right	No work required	
Dewes Bar	0.25	300	1.25	1.25	....do	....do	
Lacey's Fish-trap	0.75	100	1.25	1.0	Loose rocks	....do	
Nancy Smith Island	1.75	1,500	1.0	5.5	Bar on left	Cut brush off head of island.	
Lower Nancy Smith Island.	2.5	250	1.0	2.0	....do	Cut brush and dredging.	450
Cronch Rock Shoal	2.75	400	1.0	2.5	....do	....do	250
Reagan Shoal	3.2	50	1.0	1.25	Loose rocks	No work required	
Winningham's Upper Bar.	3.5	100	0.75	1.25	Bar on right	....do	
Winningham's Ford	3.8	300	0.75	1.25	Loose rocks	....do	
Winningham's Lower Bar.	4.0	150	0.75	1.25	Bar on right	Cut brush off head of bar.	
Winningham's Island	4.6	400	1.25	2.5	Island on left	Cut brush off head of island.	
Winningham's Tuck	4.8	600	.....	.....	A big eddy	Two snags to cut	
Taylor's Ford Island	5.75	600	1.0	4.5	Bar on left and snags on right in channel.	Two large snags to cut.	
Lick Branch Bar	6.0	400	1.0	3.0	Bar on right, sharp bend to left.	Cut timber off left bank.	
Taylor's Rock	6.4	.....	.....	.....	No obstructions	.....	
Garrett's Shoal	7.4	150	0.75	2.5	Gravel reef	200 feet riprap dam. Dredging	300 450
Franklin Creek Shoal	7.6	200	0.75	1.5	....do	Dredging	300
Auroneet Ford	7.75	300	1.0	3.0	Bar in middle of river.	Dredging 200 feet riprap dam.	300 300
Smith's Fish-trap	8.2	150	1.0	1.5	Loose rocks	Rock excavation	20
Smith's Shoals	8.3	150	1.0	0.75	No obstruction	.....	
Tate Rock	8.4	50	1.0	0.5	....do	.....	

Obstructions and proposed improvement—Continued.

Location.	Distance from Forks of Obey's.	Length.	Least depth.	Fall.	Obstruction.	Improvement.	Quantities.
	Miles.	*Feet.*	*Feet.*	*Feet.*			*Cubic yards.*
Smith's Island	8.5	400	1.25	3.0	Gravel bar	100 feet riprap dam Dredging	150 200
Shady's Sand Bar	10.25	150	0.75	3.0	do	Dredging	100
Booker's Fish-trap	10.95	250	1.0	1.0	Loose rocks	Rock excavation	20
Booker's Ford Island	11.15	2,500	1.0	4.0	Overhanging trees.	Cut brush off left bank.	
Hurricane Bar	12.75	100	0.75	1.0	Gravel reef	Dredging	200
Barnes Landing	13.25	.....	.....	.....	.....	.....	

PRELIMINARY EXAMINATION OF BEAR CREEK, MISSISSIPPI (BIG BEAR CREEK, MISSISSIPPI AND ALABAMA).

ENGINEER OFFICE, UNITED STATES ARMY,
Chattanooga, Tenn., March 12, 1887.

SIR: In compliance with letter dated office Chief of Engineers, March 2, 1887, I have the honor to report that Bear Creek, Mississippi (Big Bear Creek, Mississippi and Alabama), is, in my opinion, "worthy of improvement," based upon the following reasons, viz:

(1) This stream is the natural, and at present only, available outlet for the heavy trade in logs and lumber and other products of the counties of the States of Mississippi and Alabama through which it flows, and seeking the navigable waters of the Tennessee River at Eastport, Miss.

(2) The improvement, if extended to a distance of some 30 or 35 miles from its mouth, would provide for the present demands by greatly benefiting the passage of rafts and flat-boat navigation, and thus tending to provide for the prospective increase of commerce of a like character.

Should the Chief of Engineers direct the making of a survey of this stream under the provisions of the act of August 5, 1886, it would require about $100 to make the survey and prepare a project with estimates of costs for the improvement; and that no further allotment of funds would be necessary to my credit, as that sum is now in my hands and available for "examinations, surveys, and contingencies of rivers and harbors."

Very respectfully, your obedient servant,

J. W. BARLOW,
Lieut. Col. oof Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SURVEY OF BEAR CREEK, MISSISSIPPI (BIG BEAR CREEK, MISSISSIPPI AND ALABAMA).

ENGINEER OFFICE, UNITED STATES ARMY,
Chattanooga, Tenn., October 27, 1887.

SIR: In compliance with instructions of the Chief of Engineers, dated February 21, 1887, I have the honor to submit the following report on the survey of Bear Creek, Mississippi, made under the provisions of the river and harbor act of August 5, 1886,

Bear Creek, or Big Bear Creek, but by act of legislature now known as Bear River, rises in northwest Alabama, passes through northeast Mississippi, and discharges its waters into the Tennessee River near Eastport, Miss.

This stream was surveyed in 1875, having in view its use as a navigable water line between the Tennessee and Tombigbee rivers, and was re-examined in the winter of 1881, '82 in compliance with act of March 3, 1881.

The present examination was made from Southard's Ford to the mouth of the river, a distance of about 30 miles.

Above the ford a reconnaissance for a distance of 5 miles was made. The river became more and more rapid as it was ascended, assuming the character of a mountain stream. The bed, instead of being largely of gravel, as below, is rocky and the fall greater, which would largely increase the cost of its improvement. It was not deemed necessary to extend the survey any further than Southard's Ford.

From Southard's Ford to the mouth this stream has a fall of about 65 feet, is frequently subject to sudden rises and correspondingly sudden falls, and the "bends" are greatly obstructed by snags and overhanging trees.

About 16 miles below Southard's Ford the river is crossed by the bridge of the Memphis and Charleston Railway, and is navigable at high water from this point to its mouth.

The commerce of Bear River consists chiefly of logs in ratfs, and does not appear of sufficient importance, either present or prospective, to warrant any great outlay for its improvement.

By reason of its physical characteristics, its alluvion, low banks, insecurity of lock foundations, etc., it is not deemed advisable to recommend or discuss the radical improvement of this river by locks and dams, necessarily at an expense greatly in excess of the present and prospective value of its commercial interests, and of the demands of navigation. However, the region around its headwaters appears to be heavily timbered, and the river is the most available outlet if the channel be sufficiently improved.

It is reported that a large part of the logs rafted last year were wrecked before reaching the mouth of the river; therefore it may be deemed advisable to give relief to this class of navigation by clearing the channel from Southard's Ford to the mouth of the river of surface obstructions, loose rock, snags, fish-traps, and overhanging trees, and the construction of the necessary riprap dams to confine the water in the channel at certain points, thus securing at mean stages of the water a fairly safe channel for the passage of log-rafts and flat-boats to the Tennessee River during a period of about eight months in each year.

The cost of such improvement would be about $50,000, and should Congress decide to undertake the work $10,000 could be profitably expended yearly until its completion.

A small annual outlay will be necessary to maintain the channel after being placed in the navigable condition as projected.

The report of First Lieut. H. E. Waterman, Corps of Engineers, in local charge of the survey, is hereto attached, accompanied by a map* in eleven sections.

Respectfully submitted.

J. W. BARLOW,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

* Omitted.

REPORT OF FIRST LIEUTENANT H. E. WATERMAN, CORPS OF ENGINEERS.

ENGINEER OFFICE, UNITED STATES ARMY,
Nashville, Tenn., September 19, 1887.

SIR: I have the honor to submit the following report of an examination of Big Bear Creek [Bear River], Mississippi and Alabama, made by me, assisted by Assistant Engineer C. A. Locke, in accordance with your orders of date June 22, 1887.

On June 24 we proceeded via Iuka, Miss., to Southard's Ford, Big Bear Creek. We began the survey at this point and completed it to the Tennessee River on July 2.

I forward herewith a map * of the river in eleven sections.

(1) I also inclose a table of obstructions and shoals showing their nature and the improvements necessary to secure navigation above low water.

The total estimates for this kind of improvement are as follows:

Cutting, etc., 877 overhanging trees	$1,500
Cutting 1,000 snags	1,500
Riprap dam (11,930 cubic yards)	36,000
Sundry improvements	2,500
Equipment	2,000
Contingencies, damages to property owners, etc	6,500
Total	50,000

This improvement will probably only be temporary, since new channels can be easily formed through the low bottom lands which border the stream throughout nearly all the distance examined. Navigation, if improved in accordance with these estimates, would be confined to mean stages of water. At high water the river leaves its banks to such an extent that rafts or boats could hardly keep the channel.

(2) Estimate for slack-water navigation, 3 feet allowed at all periods.

The total fall of the river in pools and shoals from Southard's Ford to the Tennessee River is 65 feet. To overcome this fall probably eight locks and dams would be necessary.

ESTIMATE OF COST.

Eight locks and dams	$480,000
Damages to property	15,000
Removal of existing obstructions	5,000
Total	500,000

This kind of improvement is very difficult to estimate on, for the following reasons:

(1) The bottom lands are of such great extent that it would be almost impossible to prevent water from working around the dams.

(2) It would probably be impossible to secure a rock foundation for the lock-walls, thus requiring an expensive artificial floor to each lock, with the chances of constant leakage and eventually undermining.

(3) The commerce of the section of country bordering on this stream is very little, and it was difficult to determine its exact amount. Nearly all the timber near the river below Southard's Ford has been cut down. It is estimated that 500,000 feet, B. M., of logs were rafted down the river last year, of which a large part was wrecked before reaching the river's mouth.

Of other commerce we could find no evidence, and in consequence I hardly think either of the two mentioned kinds of improvement advisable.

As to the character of Big Bear Creek above Southard's Ford I have the honor to state the following:

Our instructions designated some point of the river about 30 miles above the mouth as the starting point, and from the best information obtainable we judged this ford to be about at the proper distance from the mouth. A reconnaissance was made from a point 5 miles above Southard's Ford.

Above this ford the river is of a totally different nature from below; above the shoals are rock, and the fall is, I should judge, more rapid than below.

It partakes in general above this point more nearly of the nature of a mountainous stream. Below Southard's Ford the bars are gravel almost exclusively.

From our examination, I should estimate the cost of improvement above this point as greater than below. One very serious log-jam occurs in the river about a mile above Southard's Ford.

* Omitted.

The lower limit of such timber as is near enough to the river to be available for rafting, is about 6 miles above Southard's Ford, and of course the lumber interests are now interested still further up the river.

Very respectfully, your obedient servant,

H. E. WATERMAN,
First Lieutenant of Engineers.

Lieut. Col. J. W. BARLOW,
Corps of Engineers, U. S. A.

Table of shoals and obstructions, Bear River, Mississippi and Alabama.

No.	Shoal.	From Southard's Ford.	Length of obstruction.	Least depth.	Fall.	Nature of obstruction.		Improvement suggested.	
						Overhanging trees.	Snags.	Riprap dam.	Sundry improvements.
		Miles	*Feet.*	*Feet.*	*Feet.*			*Cu. yds.*	
1	Southard's Ford	0.0	577	0.9	0.67	4	2	.....	
2	.....	0.5	157	0.6	2.35	20	6	280	5 stumps to be grubbed.
3	Moody's Mills Dam	2.9	10	0.2	5.00	53	50	60	Remove 200 feet of mill-dam.
4	.....	3.0	997	0.5	2.05	10	7	40	
5	.....	4.3	600	0.6	0.70	4	6	.....	
6	.....	5.0	1,613	1.0	3.48	32	50	660	Build brush and rock dam 100 by 11 feet; shore protected, 80 by 11 feet.
7	.....	5.4	1,015	1.5	2.24	40	71	170	
8	.....	6.8	950	0.5	1.94	42	55	420	Remove old dam—10 cubic yards.
9	.....	7.0	600	1.0	0.36	2	.....	.....	
10	.....	7.4	512	2.0	1.75	17	15	100	
11	Thompson's Ford.	8.2	260	1.5	0.93	2	26	.....	
12	.....	9.1	980	0.5	2.21	24	17	50	23 cubic yards rock; blasting in deep water, also 400 blasts of solid rock.
13	.....	9.7	565	0.5	0.36	5	.....	.....	
14	Fish trap	10.1	50	0.5	1.52	.....	.....	250	Remove fish-trap 200 by 15 feet.
15	.....	10.7	700	1.0	1.65	8	14	350	Excavate 3 cubic yards loose rock.
16	.....	13.0	440	1.0	1.90	3	25	800	
17	.....	14.0	6,000	1.0	5.07	68	97	610	Excavate 6 cubic yards loose rock.
18	Ford	15.5	600	1.0	0.89	.....	41	510	
19	Mouth of Buzzard Roost Creek.	16.0	616	1.5	0.97	1	14	.....	
20	Memphis and Charleston R. R. Bridge.	16.8	222	0.8	0.25	23	12	800	
21	The Three Chutes.	18.0	7,172	1.0	4.59	97	107	1,240	
22	.....	19.9	1,976	1.0	2.30	44	35	720	Grubbing of stumps and brush.
23	.....	21.5	2,035	2.0	3.61	25	53	2,920	
24	Fish-trap	22.5	50	0.5	1.80	41	35	.....	Remove fish-trap.
25	.....	22.8	1,500	0.1	1.38	4	43	160	
26	.....	24.0	350	3.0	0.32	20	25	.....	
27	.....	24.6	950	3.0	0.72	11	21	90	Remove large root.
28	Fish-trap	25.1	10	0.2	1.00	63	32	.....	Remove fish-trap.
29	.....	25.4	1,200	1.0	1.93	65	23	1,400	Remove stumps.
30	.....	26.2	410	2.0	0.50	53	42	.....	
31	Fish-trap	27.0	30	0.5	2.05	.....	.....	.....	Remove fish-trap.
32	.....	27.6	205	3.0	0.66	32	32	300	Grubbing of brush.
33	.....	28.0	225	2.0	0.63	39	9	.....	
34	.....	28.4	307	1.0	1.20	12	10	.....	Do.
35	.....	28.6	3,000	2.0	1.23	11	21	.....	Do.
36	.....	29.3	800	3.0	0.85	2	44	.....	Remove eight stumps.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 85.

HARBORS OF DUXBURY, MANCHESTER, WELLFLEET, AND WINTHROP, MASSACHUSETTS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examinations and surveys of the harbors of Duxbury, Manchester, Wellfleet, and Winthrop, Mass.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 10, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 6th instant from the Chief of Engineers, with copies of reports from Lieut. Col. G. L. Gillespie, Corps of Engineers, giving the results of surveys of the harbors of Duxbury, Manchester, Wellfleet, and Winthrop, Mass., and also copies of the reports on the preliminary examinations of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 6, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Lieut. Col. G. L. Gillespie, Corps of Engineers, giving the results of surveys of the harbors of Duxbury, Manchester, Wellfleet, and Winthrop, in the State of Massachusetts, made under his direction

to comply with the requirements of the river and harbor act of August 5, 1886, together with copies of the reports on the preliminary examinations of the same as therein required.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF DUXBURY HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 8, 1886.

GENERAL: In compliance with instructions contained in your letter of September 27, 1886, I have the honor to transmit herewith the following report of a preliminary examination of the harbor at Duxbury, Mass., provided for in the river and harbor act of August 5, 1886:

Duxbury Bay is one of the three divisions into which Plymouth Harbor is divided, viz: Plymouth Bay, Kingston Bay, and Duxbury Bay. The first two have previously been improved by Government appropriations, but no money has ever been expended upon the channels leading into and through Duxbury Bay.

By resolution of House of Representatives March 9, 1871, an examination or survey of the harbor of Duxbury, Mass., was called for, "with a view to dredging and improving the same, so as to afford greater protection and facilities to commerce," etc. (Report Chief of Engineers, 1872, page 963.)

The town of Duxbury covers part of the Kingston Bay, so called, and it is stated in the report of the local engineer, December 1, 1871, that the petitioners of Duxbury, in asking for the improvement of their harbor, had in view the enlargement, at Splitting-Knife Bar, of the Miles or South Channel, extending westward from the Cow Yard by the south point of Captain's Hill. Owing to the small amount of commerce at the wharves located on Duxbury Bay proper, to which access was given by the channel on the east side of Captain's Hill, and the small draught of the vessels, chiefly in the fishing trade, which entered that part of the harbor, and for other reasons, the local engineer did not recommend the improvement of the channel leading into Duxbury Bay, which was estimated to cost $66,000.

The appropriation of June 10, 1872, of $10,000, and that of March 3, 1873, of $10,000, were applied in the South Channel. No other appropriations have been made except for the improvement of Plymouth Bay. Duxbury Bay is not so important commercially as the other bays; still it has a good, wide channel, affording 12 feet depth mean low water to within 1 mile of the principal wharf, and affords a respectable anchorage for vessels when the Cow Yard is full. If the channel were extended with 6 feet depth mean low water, so that the principal wharf of the town could be reached, it is believed that all the trade of the town would be concentrated there, to the benefit and advantages of the citizens, and that many vessels would use it, by which freight charges would be reduced on coal, lumber, and other supplies, which form the principal foreign articles of consumption in the town.

The harbor "is worthy of improvement" as one of the tributaries of the main harbor of Plymouth, Mass.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 85.

HARBORS OF DUXBURY, MANCHESTER, WELLFLEET, AND WINTHROP, MASSACHUSETTS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examinations and surveys of the harbors of Duxbury, Manchester, Wellfleet, and Winthrop, Mass.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 10, 1888.

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WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 6, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Lieut. Col. G. L. Gillespie, Corps of Engineers, giving the results of surveys of the harbors of Duxbury, Manchester, Wellfleet, and Winthrop, in the State of Massachusetts, made under his direction

inasmuch as the property upon which Knapp's Wharf is located has lately changed hands, and that shore will no longer be used for commercial purposes, I have during the survey examined the shore upon which the town is built, and now present a project for a channel which will communicate with its principal wharf.

I have chosen the western branch of the Duxbury Channel for improvement, for the reason that the excavation will be less on that side, and also because the axis of the improved channel will be more nearly in the direction of the ebb currents than in the case of a channel excavated to connect the town wharf with the eastern branch.

The proposed channel will be 3,600 feet long, 60 feet wide, and 6 feet deep, mean low water, and its improvement will require the excavation of 48,000 cubic yards of material, scow measure, at an estimated cost as follows:

Dredging 48,000 cubic yards of material, scow measurement, at 25 cents per cubic yard	$12,000
Contingencies for engineering, etc	1,200
Total	13,200

A comparison of the surveys of 1871, 1875, and 1887 indicates that the channel, when once opened, will probably not deteriorate more rapidly than similar tidal channels.

An appropriation of $13,200 is recommended for the improvement.

Duxbury is not an important commercial point; but it is believed that the proposed channel will give great relief to the town by reducing the cost of transportation of such articles as coal, lumber, lime, and building materials, which enter into daily consumption.

I respectfully invite attention to the report of Mr. Haagensen, assistant engineer, for the details of the survey and for the general description of the harbor.

Duxbury is in the collection district of Plymouth, Mass., of which Plymouth is the port of entry.

The nearest light-house is the Duxbury Pier Light, situated in the Cow Yard anchorage.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. SOPHUS HAAGENSEN, ASSISTANT ENGINEER.

UNITED STATES ENGINEER'S OFFICE,
Boston, Mass., November 4, 1887.

COLONEL: I have the honor to report upon the survey of Duxbury Harbor, Massachusetts, made in August and September, 1887, in pursuance of your instructions; also to submit a map of the survey drawn to a scale of 1 : 6000.

TOPOGRAPHY.

The accompanying map is reduced from the original plot of the survey, which was drawn to a scale of 1 : 3000. A base line 2,200 feet long was measured from Knapp's Wharf eastward along the shore of Powder Point.

Fourteen triangulation points were located and occupied, and from these the details of the survey were developed. The point Duxbury Belfry is the same as in United States Engineer's Survey of 1871 (and of the U. S. Coast Survey map); by sights from this station to South Gurnet Light the present survey was connected with former surveys.

The channel improvement, for which an estimate was given in 1871, extended from the wharf on the south side of Duxbury Point, in the northern part of the harbor, to the 6-foot curve. It was 2,000 feet long, 150 feet wide, and 6 feet deep, mean low water. As sixteen years have elapsed since the survey of 1871, and since it is probable many changes have occurred in the upper harbor of Duxbury, I would recommend that an examination be made of the existing channel inside the 6-foot curve to determine the direction to be given to the improved channel.

The allotment recommended for this purpose is $400.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SURVEY OF DUXBURY HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 28, 1887.

GENERAL: In compliance with instructions contained in your letter of March 16, 1887, I have the honor to transmit herewith a report by Mr. Sophus Haagensen, assistant engineer, on the survey of Duxbury Harbor, Massachusetts, made to comply with the provisions of river and harbor act approved August 5, 1886.

The accompanying tracing gives the details of the authorized examination of the existing channel through the inner harbor of Duxbury, inside or north of the 6-foot curve, upon which is located the direction to be given to an improved channel to a selected wharf at Duxbury.

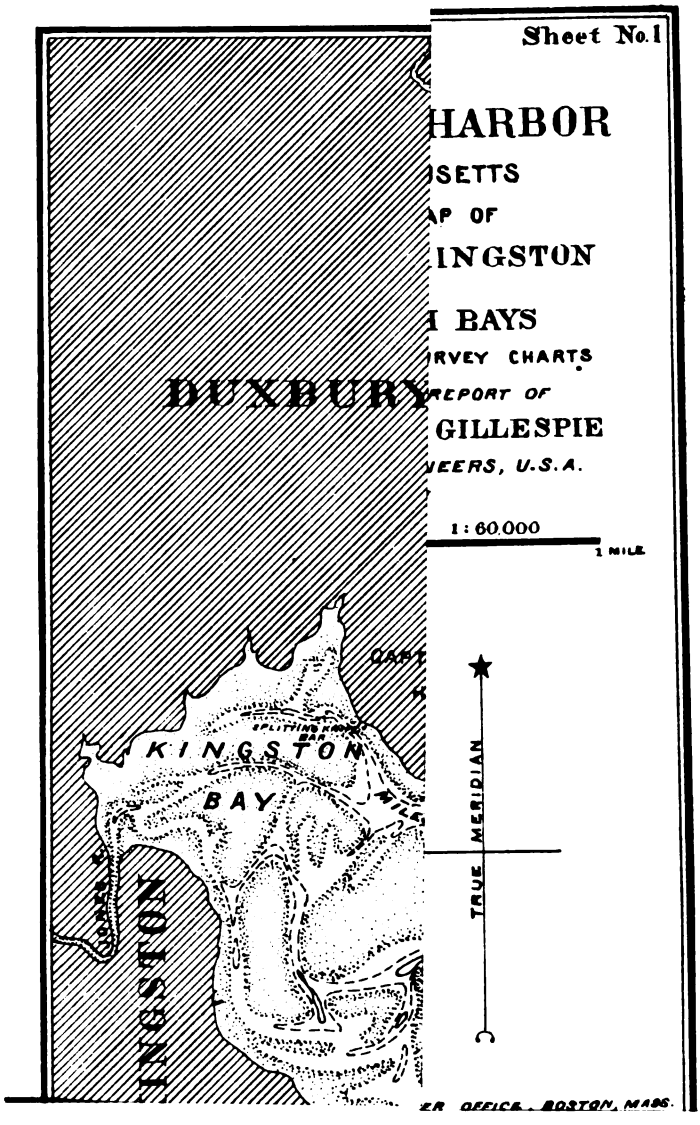
An outline tracing of Plymouth, Kingston, and Duxbury bays, combined, is also transmitted, to render intelligible the report of the local engineer, December 1, 1871. (Report Chief of Engineers, 1872, page 963.)

The Cow Yard, inside and near the sea entrance to these bays, is the anchorage common to all. It is marked by the Duxbury Pier Light, and day beacon, and has in places a depth of 12 fathoms at mean low stage. Starting from this common ground, the improvements made by the Government in past years have been to the southward in the direction of Plymouth, or northwestward in the direction of Kingston.

The channel leading to the northward through Duxbury Bay has never been improved, though the conditions of protection afforded by an outer beach are as favorable as in the case of the Plymouth Harbor improvement.

Abreast and westward of Clark's Island, the Duxbury Channel separates into two channels. The Beach channel is broad and deep, follows close to the beach, and has its depth maintained by the tidal scour from Back River. This channel is remote from the town, and has no wharves which could be conveniently converted into commercial use.

The westward channel is also amply wide and deep for vessels drawing 18 feet to within one-half mile of the southern end of the town, when it separates into two branches, the eastern branch terminating in the 6 foot curve below Knapp's Wharf, and the western terminating in the same curve below the town wharf. In the report of 1871 an estimate was submitted for connecting this eastern branch with Knapp's Wharf at a cost of $66,000. It was this improvement which I had in my mind when the preliminary report of November 8, 1886, was submitted. But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The high-water line, shown on the map, is essentially that of the U. S. Coast Survey map, the only change being a dike built across Blue River, which with Knapp's Wharf and some scattered points of the high-water line were located by us.

HYDROGRAPHY.

The area covered by our sounding is the upper northwest corner of the harbor, and amounts to 750 acres, or about 1¼ mile from north to south by nearly a mile from east to west, so as to include the main channel with its branches. Sixty ranges were established and an aggregate length of 28.6 miles of these lines run, upon which 6,663 soundings were taken; of this number 1,102 were located by transit intersections from shore stations. Below the area covered by the soundings the channel as far as the Cow Yard was "swept;" no obstructions were found. The soundings, expressed in feet and tenths, refer to mean low water.

TIDES.

A tide-staff was set in the main channel, and by eight consecutive high and low water observations seven values found for mean ocean level. From the average of these were deducted 4.65 feet (or one-half of mean rise or fall, 9.3 feet), giving mean low-water level.

A bench-mark was established on Knapp's Wharf (shown on map), and is a drill-hole in the coping stone in elevation 9.85 feet above mean low water.

CURRENT OBSERVATIONS.

The tracks of free floats set adrift near the wharves were followed both on ebb and flood tide. The velocity of current is almost imperceptible in this part of the harbor, the maximum observed being .4 foot per second on half and three-quarter ebb, and .3 foot per second on three-quarter flood. Most of the floats on the ebb tide drifted towards the main channel, although some, during the latter part of the ebb, turned the projecting point opposite Knapp's Wharf and followed the shore southward.

DESCRIPTION OF CHANNEL.

The entrance to Duxbury Harbor is from Cape Cod Bay through the "Main Ship-Channel" leading from Gurnet Lights for a distance of 3 miles to Duxbury Pier Light in the Cow Yard, which is the roadstead common to Plymouth, Kingston, and Duxbury Harbors; this channel runs due west, is straight, almost one-half mile wide, and passable for vessels of the deepest draught. The Cow Yard is circular, about three-fourths of a mile in diameter, and the greatest depth is 12 fathoms at low water. From Duxbury Pier Light the main channel of Duxbury Harbor runs in a northerly direction, tapering from a width of 600 feet to 200 feet on the 18-foot curve at the point where the present survey began, distant 2¾ miles from Duxbury Pier Light, or 5¾ miles from the Gurnet. About midways in this reach, or abreast of Clark's Island, is the junction with the Beach Channel, which carries off the water of Back River, the drain from the extensive marshes north of Powder Point.

From the initial point of the survey the 18-foot channel is continuous for 3,600 feet; the 12-foot (from 300 to 200 feet wide) for a distance of 5,000 feet; the 6-foot channel extends to 6,500 feet, where the channel through the flats becomes very circuitous and shallow, and practically ends at 9,000 feet, or opposite Knapp's Wharf. Five hundred feet north of the initial point a 10-foot channel branches off to the west and north to a distance of 3,500 feet. At 3,800 feet the 6-foot channel stops, although there are many "pot-holes" with 6 feet depth between this point and the Town Landing, 7,400 feet distant.

Outside of the above-described channel the surveyed area is mud-flats in an average elevation of mean low water, running almost entirely dry at an extreme low water.

Borings made in 1871 show these flats to consist of sand and mud overlying hard clay, which latter was struck in the following depths: 5¾ feet, 11¼ feet, 2¼ feet, and 6¾ feet below mean low water in four representative sections of this part of the harbor.

The survey shows no change in the channels or flats, as developed by survey of 1871 and by U. S. Coast Survey of 1867 and 1870.

Very respectfully, your obedient servant,

SOPHUS HAAGENSEN,
Assistant Engineer.

Lieut. Col. GEO. L. GILLESPIE,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF MANCHESTER HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 20, 1886.

GENERAL: In compliance with instructions contained in your letter of September 27, 1886, I have the honor to submit the report of a preliminary examination of Manchester Harbor, Massachusetts, provided for in the river and harbor act approved August 5, 1886. Manchester Harbor is situated on the eastern shore of Massachusetts, upon Massachusetts Bay, 5½ miles northeastward of the entrance to Salem Harbor. At the entrance there is a small sheltered roadstead, containing 300 acres or more, with 5 fathoms water, formed by Great Misery Island, House Island, and the mainland terminating in Gale's Point, which is much used by fishing vessels during northeasterly, easterly, and southerly storms. The entrance is marked by a light-house on Baker's Island, and the channels east and west of Great Misery Island are buoyed by the Light-House Department. The roadstead shoals gradually towards the entrance to Manchester Harbor, and opposite Glass Head; at the immediate entrance the depth is 3 feet mean low water. At a distance of 2,500 feet further inland, at the Narrows, the width of the water-way is contracted to less than 1,000 feet, and the depth reduced to 1 foot, approximately, mean low water. Thence to the wharves at the upper end of the bay, where the town of Manchester is located, is practically no water at low stage. The bed of the harbor is composed of loam and sand, with a few bowlders visible close inshore. At a conference which I had with the Selectmen of the town on November 10, 1886, I was informed that the Government expended about $5,000 thirty years ago in blasting and removing rocks alongside the channel at the Narrows. The printed records contain no statement of such appropriation or improvement. I have not been able to learn that it was an improvement by the State or by private individuals.

The harbor is divided into the upper and lower harbor by the contraction at the Narrows, and the distance from the 3-foot curve at the entrance to the town wharves is 1 mile. No hydrographic survey of the harbor has ever been made, but the citizens claim that there was formerly a depth of 3 feet mean low water into the upper harbor, and that the decline in shipping and the present disuse of the harbor are due to the decline in the navigable depths, which are now such as to practically close the harbor at low tide.

The improvement desired is the restoration of the channel to its former depth of 3 to 4 feet mean low water. This will require the dredging of a channel 5,000 feet long, 60 feet wide, and 2½ to 3 feet deep, with an estimated excavation of 100,000 cubic yards of material.

The inclosed paper prepared by the selectmen of Manchester gives an exhibit of the interests represented in the harbor and the country adjacent. The sheltered roadstead at the entrance, the facility with which it may be entered from the main ship-channel leading to Salem Harbor, and the additional shelter which may be gained by excavating a channel into Manchester Harbor, make this an important harbor of the third class.

The citizens are fully justified in asking relief from the Government. It will be practicable at small cost to open a narrow channel to the lower wharves for the use of vessels in transporting at reduced rates to the town and adjacent country those supplies now carried by rail, which most generally enter into home consumption, such as coal, lumber, products of iron and mercantile articles.

The harbor is worthy of improvement, and I respectfully recommend an allotment of $1,000 for making a complete hydrographic survey of the harbor from the 6-foot curve of the roadstead to the lower wharves.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

COMMUNICATION FROM THE SELECTMEN, MERCHANTS, ETC., OF MANCHESTER, MASSACHUSETTS.

MANCHESTER, *November* 17, 1886.

DEAR SIR: We, the undersigned selectmen, merchants, and residents of the town of Manchester, Essex County, Mass., respectfully submit that the improvement of our harbor is necessary and expedient for the following reasons, among others, viz:

(1) That our commercial and manufacturing interests have been injured by the gradual filling up of our harbor. There was formerly a good channel, which has been obstructed by the accumulations of years. Within twenty-five years vessels loaded with coal and drawing 11 feet of water could enter the harbor and unload. At the present time it is necessary to bring the coal to Salem by vessel, and from there it must be brought down by rail 9 miles and carted to mills, thus making an extra cost for transportation, to be borne by the consumers.

The consumption of coal has increased within the past twelve years from 800 to 2,800 tons, and a continued increase is anticipated. While this coal could formerly be unloaded at the dock, it is necessary now to bring it in by lighters when it comes by sea, or else by rail, as above stated.

In former years vessels ran between Manchester and Boston, carrying our manufactures of furniture, etc., and bringing articles of home consumption in return. Now it is necessary to send everything of this kind by rail.

Formerly a large part of the hay produced here was sent away to be sold. The product of hay is now greater than ever before, but it is all consumed here, and fully as much more brought in from Maine and other places. If the channel was improved this hay could be brought by coasters at less expense to consumers than it is now brought by rail.

The consumption of lumber amounts to at least 1,500,000 feet, nearly all of which must be brought by rail or teamed in, unless the channel is deepened.

The consumption of granite in Manchester since May, 1886, exceeds 600 tons, nearly all of which came from Rockport, and, with the exception of about 60 tons, all was brought by rail or teamed in at much greater cost than would be necessary if the depth of channel would allow it to be brought by water.

This is also true as regards other building material. The consumption of brick, lime, and cement, has increased within a few years at least three-fold. This material could be brought by water at reduced cost if depth of channel would allow

(2) The business and commerce of Manchester would be benefited by the improvement of our harbor. Notwithstanding the injury caused by the filling up of the channel and harbor, which forced the fifty fishing vessels, formerly engaged in this pursuit, to other ports having a greater depth of water, our town valuation has steadily increased from $1,746,222 in 1877, to $4,826,888 in 1886, and we have reason to believe will continue to increase, especially if the harbor be improved and channel deepened.

We believe that the desired improvement will be of great benefit to the neighboring districts of Magnolia and Beverly Farms, as these towns are obliged to draw their supplies, to a great extent, from distant places, and depend for transport aton upon a railroad corporation which can exact its own terms for carrying goods and freight, as it has no competitor in the carrying trade. Supplies could be brought by Manchester Harbor if improved and deepened.

Some years ago our channel had at least 4 feet of water at low tide. Now there is less than 1 foot, and we respectfully suggest that the channel be dredged to a depth of at least 5 feet at low water, and to a width of 100 feet clear.

The rock known as Bow Bell presents a dangerous obstacle to the navigation of our harbor, as it lies directly in the channel, and we suggest that it be removed.

We also respectfully suggest that it would be an advantage to the harbor if a portion of the flats be dredged out, so that there may be an anchorage for boats at all

tides. These flats have filled up to a great extent within a few years, and the depth of the harbor gained by a removal of part of them would be greatly to its benefit.

We desire that the harbor be improved as much as possible, and remain, sir,

Yours respectfully,

JOHN H. CHEEVER,
HENRY T. BINGHAM,
WM. A. STONE,
Selectmen of Manchester.

T. JEFFERSON COOLIDGE.
SAMUEL KNIGHT.
DANIEL LEACH.
JOHN W. CARTER.
THEO. W. SLADE.
C. H. SHELDON.
A. E. LOW.
F. K. HOOPER.
JOHN ALLEN.
HENRY P. KITFIELD.
GEORGE A. KITFIELD.
GEO. C. LEACH.

Col. GEO. L. GILLESPIE.

SURVEY OF MANCHESTER HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 28, 1887.

GENERAL: In compliance with instructions contained in your letter of March 16, 1887, I have the honor to transmit herewith a report of Mr. Sophus Haagensen on the survey of Manchester Harbor, Massachusetts, made to comply with provisions of river and harbor act approved August 5, 1886.

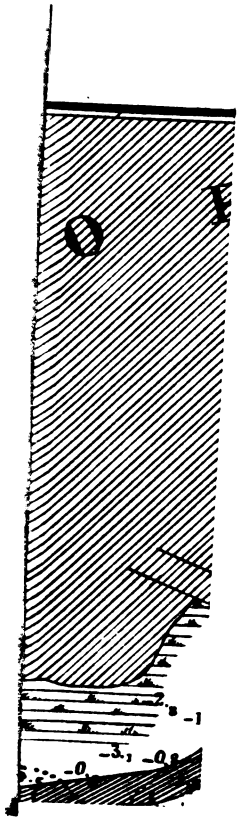
A tracing is also transmitted showing the limits of the improvement proposed for this harbor determined by the survey.

My preliminary report on this harbor, dated November 20, 1886, gives all the material facts relating to this harbor and the reasons which influenced me in recommending the survey. The only new facts are those which have been revealed by the accompanying chart, which has been prepared from the survey.

The channel from the roadstead to Proctor's Point is everywhere 100 feet wide, with a least depth of 6½ feet mean low water, is unobstructed, and is adequate to the commercial necessities of the port. At Proctor's Point the first important obstruction is met with, which consists of a submerged ledge of rock projecting westward from the west side of Proctor's Point and extending well into the deep-water channel. Another ledge, called the Bow Bell, crops out on the opposite side of the channel a little to the northward and westward of the first ledge. From Proctor's Point to the "Narrows," a distance of 1,400 feet, the channel rapidly shoals to 1½ feet depth mean low water. It is but slightly defined by a few deep and disconnected pools, in which the depth varies from 4 to 5½ feet mean low water. From the "Narrows" to the town wharves, a further distance of 2,500 feet, approximately, the bottom of the harbor is practically bare at average low tide. The high-water channel in this last reach is crossed near the town by the Boston and Maine Railroad (eastern division) on a bridge which is provided with a draw opening 28 feet wide in the clear.

It is recommended that a channel be opened from Proctor's Point to the town wharves, which shall be 60 feet wide on bottom and 4 feet deep, mean low water. Its direction is given on the accompanying chart.

In order to take advantage of the pools exterior to the "Narrows," which indicate the direction of the proper channel, an excavation will be required to be made through a portion of Proctor's ledge, leaving the Bow Bell ledge untouched on the west side.



The following is the estimate of the cost of the improvement:

Excavating 46,000 cubic yards of material, sand and loam, in a channel 60 feet wide on bottom, slope 1 on 4, and 4 feet deep mean low water, from Proctor's Point to the town wharves, at 25 cents per cubic yard	$11,500
Blasting and removing 150 cubic yards of rock from the west side of Proctor's ledge, at $10 per cubic yard	1,500
Contingencies for engineering, etc	1,300
Total	14,300

An appropriation of $14,300 is recommended for the improvement indicated in the foregoing report.

The commerce of Manchester, at present, is nominal.

Attention is invited to the report of Mr. Haagensen for the details of the survey, the description of the harbor, and the obstructions to navigation.

Manchester Harbor is in the collection district of Gloucester, Mass., of which Gloucester is the port of entry. The nearest light-house is situated upon Baker's Island, at the entrance to the roadstead, 2¼ miles from Proctor's Point.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. SOPHUS HAAGENSEN, ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., October 31, 1887.

COLONEL: I have the honor to report upon the survey of Manchester Harbor, Massachusetts, made in July, 1887, in pursuance of your instructions; also to submit a map of the survey drawn to a scale of 1:3,000.

TOPOGRAPHY.

The shore-lines shown on the map are, with a few additions of wharves and piers built since 1851, those of the U. S. Coast Survey manuscript map. A copy of this on a scale of 1:10,000 was obtained and enlarged to a scale of 1:3,000. This sheet, used in the field on the plane table, enabled us to orient stations, and to establish a system of ranges for the soundings, so as to correspond with the high-water line.

HYDROGRAPHY.

The area covered by the soundings extends from the 8-foot contour of the outer roadstead up to head of tide-water at Knight's Wharf, and is about 230 acres. Seventy-one lines were run, aggregating in length 8.8 miles, upon which 2,655 soundings were taken. Of this number about one-third were located by plane-table intersections from suitable shore-stations. One hundred and forty-four borings were made, principally on the ledge off Proctor's Point and the Bow Bell, of which a special map was made on a scale of 1:500.

The soundings and borings all refer to mean low water.

TIDES.

The range of tide (mean rise or fall) was assumed to be the same as for Gloucester Harbor (8 miles distant), where a full lunation had previously been observed with the following result:

	Feet.
Mean rise or fall of tide	9.0
Extreme low water observed	1.8
Extreme high water observed	11.0

To determine the plane of mean low water, eight consecutive high and low waters were observed on a tide-staff set in the channel near Glass Head. The mean was

taken of every two consecutive high and low waters, giving seven values of mean ocean level. From the average of these seven values, 4.5 feet, or half of the mean rise or fall, was deducted to find the plane of mean low water adopted for the survey

The bench-mark established is shown on the plan; it is the top of the rail of the Eastern Railroad at the draw-bridge, and is 15 feet above mean low water.

DESCRIPTION OF THE CHANNEL AS DEVELOPED BY THE SURVEY.

The entrance to Manchester Harbor is from Massachusetts Bay through the main ship-channel leading to Salem Harbor, which it leaves one-fourth mile west of Baker's Island lights; thence 1 mile almost due north to the center of the roadstead, where there is an anchorage three-fourths of a mile square with a greatest depth of 6 fathoms at mean low water. This roadstead is protected on the south by Great Misery Island, on the west and north by the mainland, and on the east by Gale's Point, Ram Island, and House Island. To the southeast it is exposed.

One-half mile northeast of the center of the roadstead, in 8 feet depth at mean low water, commences the tidal channel leading to the wharves. It preserves this depth for 3,200 feet, or opposite Proctor's Point; on the 4-foot contour its width is from 200 to 80 feet. Beyond Proctor's Point no navigable channel exists; there are, however, "pot holes" with not to exceed 5 feet in depth. Three thousand feet above Proctor's Point the Eastern Railroad (Gloucester Branch) crosses the harbor on an earthen embankment, with a draw opening 27.9 feet in the clear.

Nine hundred feet beyond the draw is the head of tide-water near the Town Landing. The remainder of the harbor consists of mud flats, mostly in an elevation 2 feet above mean low water. Ledge in and near the channel was only found off Proctor's Point and at the "Bow Bell," which some fifty years ago, it is said, was reduced by blasting to its present level about mean low water.

Very respectfully, your obedient servant,

SOPHUS HAAGENSEN,
Assistant Engineer.

Lieut. Col. GEO. L. GILLESPIE,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF WELLFLEET HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 8, 1886.

GENERAL: In compliance with instructions contained in your letter of September 27, 1886, I have the honor to transmit herewith the following report of a preliminary examination of the harbor at Wellfleet, Mass., provided for in the river and harbor act of August 5, 1886.

This harbor is situated near the northern extremity of Cape Cod, and is the best and most sheltered harbor on the cape, except that of Provincetown. It is especially frequented by mackerel fishermen, whose fleet numbers over one hundred vessels, but this number is largely increased by other vessels which come irregularly. The draught of some of the vessels is 10 feet and over, and under present conditions they can only make the harbor at half tide.

The value of the annual fish yield exceeds $500,000.

By act of Congress January 31, 1871, a survey of this harbor was made, June, 1871, and a report submitted November 3, 1871 (Report Chief of Engineers, 1872, page 969). The report embodied a project for excavating a channel to give access to Central and Commercial wharves at Wellfleet 2,060 feet long, 150 feet wide, and 4 feet deep, at an estimated cost of $30,000.

By act June 10, 1872, an appropriation of $5,000 was made for the improvement, which sum was expended in 1872–'73 in the complete removal of the channel, Mayo, Bay, Lobster, and Lumpfish rocks.

The survey of 1871 only covered that portion of the upper bay which extends north of "Deep Hole," about 1 mile from the town wharves

The obstructions of which mariners now complain, in addition to those mentioned in report of 1871, are the sand-shoals in the lower bay (all the known bowlders near the channel have been removed) at the entrance and inside, opposite Billingsgate light-house.

I think the harbor "worthy of improvement," and respectfully recommend that the portion of the harbor surveyed in 1871 be re-examined with the view of ascertaining the changes which have taken place since that survey, and that special surveys be made of the two shoals between Billingsgate light-house and the deep water of the outer bay. The object of the first is to make an estimate for a channel with 6 feet depth, mean low water, to the town wharves, and of the second for providing an entrance 12 feet deep, mean low water, for the mackerel fleet, to a secure harbor of refuge in the inner harbor at all stages of the tide.

The cost of the survey is estimated at $1,500. An allotment of that sum for the purpose indicated is respectfully recommended.

A sketch* plan of Wellfleet Harbor is inclosed herewith.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SURVEY OF WELLFLEET HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 28, 1887.

GENERAL: In compliance with instructions contained in your letter dated March 16, 1887, I have the honor to transmit herewith a report of Mr. Sophus Haagensen, assistant engineer, on he survey of Wellfleet Harbor, Massachusetts, made to comply with the provisions of the river and harbor act approved August 5, 1886.

A tracing of the chart prepared from the survey is also transmitted, upon which are drawn the limits of the improvement proposed for the harbor.

Wellfleet is situated on Cape Cod Bay, on the south shore of the Peninsula of Cape Cod, 12 miles southeast of Provincetown Harbor. It is the best and most sheltered harbor on the cape, except that of Provincetown, and is the resort of the principal mackerel fleet of the coast, which fleet numbers over one hundred vessels, besides of other fishermen whose sail vary in number and kind.

The catch of fish, one year with another, averages 20,000 barrels, at an estimated valuation of $100,000.

The harbor is divided, practically, into two parts:

First. The inner harbor, which includes the part north of Smalley's Bar, and is known as the Deep Hole anchorage, from which the cargoes are lightered to the wharves of the town. This anchorage is completely protected and safe, as the bounding shores are all above the highest water level. The area included within the 6-foot curve is 900 acres, and is distant 3,700 feet, at the nearest point, from the town wharves. The 12-foot channel, which traverses nearly the whole of this basin, is 400 feet wide, and practically terminates in the Deep Hole.

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*Omitted.

Second. The outer harbor, which includes the outer anchorage and the approach over Stony Bar. At very high stages of the tide this anchorage becomes a wide estuary of Cape Cod Bay, as the shoals on the west side, including Billingsgate Island, are wholly submerged. Safe anchorage at such times can only be secured by going into the inner harbor. Billingsgate Island and Lieutenant Shoal divide the outer harbor into two basins; the outer one is wide and shoal, having a width between the 12-foot curves of 3,000 feet and a maximum depth of 21 feet; while the inner one is narrow and deep, having a width between the 12-foot curves of 1,000 feet and a maximum depth of 34 feet. The connecting passage of these two basins, where the width is only 300 feet and the depth 14 feet, is regarded by mariners as the part of the channel which affords the most difficult navigation. A proper location of the buoys will make the access easy and convenient.

The outer bar, known as Stony Bar, offers no obstruction; it has 15½ feet at mean low water, and the channel over it, between the 12-foot curves, has a width of 1,400 feet.

It has been before stated that the anchorage of the inner harbor is good and sheltered; but it must be noted that it does not meet all the commercial necessities of the harbor, inasmuch as it has no connection for vessels with the town wharves at low tide. From the margin of the Deep Hole the bottom rises gradually until it becomes exposed at the wharves at low tide. This fact very much impairs the anchorage commercially. It is proposed to ameliorate the conditions in a degree by excavating a channel 4,200 feet long, 100 feet wide at bottom, and 6 feet deep mean low water, from the Deep Hole to the wharves.

The estimate of the cost is as follows:

Dredging 86,000 cubic yards of material, scow measurement, at 25 cents per cubic yard	$21,500
Contingencies for engineering, etc	2,500
Total	24,000

An appropriation of $24,000 is recommended for this improvement.

When this new channel is opened and the buoys in the outer harbor are properly located, the inner harbor will be equal to every demand upon it for depth of water and ease of access.

I invite attention to the accompanying report of Mr. Haagensen, assistant engineer, for the details of the survey and the description of the harbor.

I also invite attention to my preliminary report on the harbor, dated November 8, 1886.

My thanks are due to Mr. Simeon Atwood, deputy collector of customs, for the accompanying statement giving the commercial statistics of the harbor, viz:

The following is a report for the harbor of Wellfleet, showing the amount of revenue collected during the fiscal year ending June 30, 1887, the number of entrances and clearances, the tonnage and character of the same, and other items showing the amount of commerce and navigation, both foreign and domestic, to be benefited by the completion of each particular work:

Foreign clearances	3
Coastwise entries of foreign salt	11
Revenue collected	$166.41
Salt received in bond (998,900 pounds)	$1,012.00
Lumber landed (240,000 feet)	$3,500.00
Coal landed (1,221 tons)	$6,105.00
Cured mackerel landed (3,105 barrels)	$41,704.27

	Gross.	Net.
ıage employed wholly in coasting	3,053.00	2,900.39
ıage employed coasting and fishing	2,595.65	2,465.82
Total tonnage	5,648.65	5,366.21

ssels licensed for coasting, 26; vessels licensed for fishing, 41.
spectfully submitted.

SIMEON ATWOOD,
Deputy Collector.

S.—I most respectfully suggest that the year ending June 30, 1886, was an off so far as the fishing interests and products are concerned. To show the products ears previous I append the following:

Catch of mackerel.

Years.	Barrels.	Value.
	31,365	$171,059.00
	30,133	177,173.27
	14,175	126,845.10
	32,168	155,187.19
	19,676	102,377.23
	3,105	41,704.27
estimate)	6,000	90,000.00

nsequently the amount of salt received would be correspondingly large.
Respectfully,

SIMEON ATWOOD,
Deputy Collector.

ellfleet is in the collection district of Barnstable, Mass., and the nearest light-se is located upon Billingsgate Island.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

he CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. SOPHUS HAAGENSEN, ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 11, 1887.

OLONEL: I have the honor to report upon the survey of Wellfleet Harbor, Massa-setts, made in September and October, 1887, in pursuance of your instructions; to submit a map of the survey drawn to a scale of 1:20,000.

TOPOGRAPHY.

e accompanying map is reduced from the original plot of the survey, which was n to a scale of 1:5,000. A base-line, 5,580.66 feet long, was measured from antile Wharf westward along the beach toward Herring River. Twenty-two gulation points were located, of which nine were occupied, and from these two red and fourteen triangulation angles were measured; the most important were ted not less than four times.

e high-water line is essentially that of the U. S. Coast Survey map, 1851, with ption of the wharves in Wellfleet and the shore line of Billingsgate Island. The nt island is much reduced in size, and has been beaten to the eastward since 1851 t 800 feet. The outer Billingsgate Island (former site of the light-house) has disappeared, and the highest part of the remains, dry at half-tide (Sunken Island), 0 feet east of its position in 1851.

HYDROGRAPHY.

e area of Wellfleet Harbor is about 5 miles north to south by 3 miles from east to , and amounts to 9,811 acres. Of this area about 2,240 acres were covered by our

soundings, so as to develop the channel. In the southerly part of the harbor the channel through Stony Bar and that between Billingsgate Island and Lieutenant Island Shoal were specially examined by closer soundings; in the northerly part, from Smalley's Bar to the town wharves, most of the area was covered by close soundings. One hundred and thirteen lines of soundings were established. An aggregate length of 60 miles of these were run, upon which 11,717 soundings were taken; of this number 1,867 were located by observations from or upon shore stations with transit or sextant. The soundings, expressed in feet and tenths, are selected from the above; those in feet are taken from the U. S. Coast Survey manuscript map; they all refer to mean low water.

TIDES.

Two tide-staves were established, one at Central Wharf, for the upper harbor, and one in the channel off Billingsgate Island, for the survey of the lower harbor; they both had their zero at mean low water, as determined in 1871, and which is marked by the top of stone monument N. 8, 14.76 feet above mean low water. When set in 1871, monument 8 was 55 feet southeast of Mayo's Beach Light; since then the light has been moved north about 100 feet.

	Feet.
Mean rise or fall of tide	11.2
Mean rise or fall of spring-tide	13.3
Mean rise or fall of neap-tide	9.4

DESCRIPTION OF HARBOR AND SHIP CHANNEL.

The harbor may be divided in the upper and lower harbor divided by a line through Smalley's Bar and Lieutenant Island.

The upper harbor is well sheltered on the east and north by the high hills of the mainland, and on the west by Great Island, Great and Little Beach hills.

The lower harbor is well protected against east winds by the high land of Eastham, but in the other directions much exposed, especially at high water of spring-tides, when even Billingsgate Island is overflowed.

The lower harbor has two basins: Basin 1, between Stony Bar and Lieutenant Island Shoal; basin 2, between Lieutenant Island Shoal and Smalley's Bar.

The upper harbor has two basins: Basin 3, between Smalley's Bar and Quahaug Ground; basin 4, or Deep Hole, between Quahaug Ground and the flats, gradually shoaling towards the wharves.

The channel from Cape Cod Bay through Stony Bar to Basin 1 is 4,000 feet long from the 18-foot curve on the outside, to the 18-foot hole inside of the bar. The black buoy on the bar is half-way between the 18-foot depths, and its distance from the wharves in town is 6 miles, measured on the axis of the ship channel. There is a 15-foot channel through Stony Bar of a least width of 700 feet; the 12-foot channel is not less than 1,400 feet wide. Basin 1 is on the 12-foot curve, 3,000 feet in width by 4,000 feet in length. The greatest depth found is 21 feet, and the average depth is 15 feet at mean low water. From this basin three dangerous rocks were removed in 1872–'73, viz.:

Channel Rock, having only 1.8 feet water over it at mean low water; Lobster Rock having only 4.5 feet water over it at mean low water, and Lumpfish Rock having only 3.5 feet water over it at mean low water.

The channel between Basin 1 and 2 is the one most complained of by the pilots. It runs in a northwesterly direction to a line between Billingsgate Island Light and the red buoy at the extremity of Lieutenant Island Shoal; this buoy is 4¼ miles from the wharves; 2,000 feet below the buoy is the most difficult place; there is a least width of 300 feet on the 12-foot contours, and 14 feet depth can be carried through the channel, which deepens rapidly above; half-way to the buoy the 18-foot channel commences; off the red buoy the depth is 27 feet at mean low water.

Basin 2 is the deepest part of the harbor. From the red buoy at Lieutenant Island Shoal to the black buoy off Smalley's Bar (2½ miles from the wharves) there is a straight 18-foot channel, averaging 1,000 feet in width, and having from 4 to 5½ fathoms of water in it at mean low water.

Basin 3 joins Basin 2 at the black buoy off Smalley's Bar. The 18-foot channel at this junction is not less than 400 feet wide. Basin 3 measures on the 12-foot contour 2,000 by 3,000 feet. The greatest depth is 21 feet, while the average is 16 feet at mean low water. From this basin two dangerous rocks were removed in 1872–'73 viz:

Mayo's Rock, having only 2.7 feet over it at mean low water, and Bay Rock, the top of which was 3.4 feet above mean low water.

The Quahaug Ground separates Basin 3 from Basin 4 (Deep Hole); the channel connecting the two begins one-half mile northwest of Smalley's Bar Buoy, and runs due

north for about 1 mile, where the continuous 12-foot curve ends, distant about 1 mile from the wharves. The lower half of the 12-foot channel averages 500 feet in width, the upper half 300 feet.

The greatest depth in Deep Hole is 13 feet, and the 6 foot contour extends to within 3,600 feet from Central Wharf. With exception of one "pot hole" one-half mile from the wharves, with not to exceed 7 feet at mean low water, the flats shoal gradually to the town.

Herring River on the west, and Town Creek on the east, empty into the head of the harbor, draining large areas of salt marshes in the town.

With the exception of the development of details by more numerous soundings, no material change in the upper harbor can be seen by comparison with former surveys; but the present detailed surveys of the bars in the lower harbor (not surveyed in 1871), shows practicable channels through them of such widths and depths as are stated above.

Very respectfully, your obedient servant,

SOPHUS HAAGENSEN,
Assistant Engineer.

Lieut. Col. GEO. L. GILLESPIE,
Corps of Engineers, U. S. A.

PRELIMINARY EXAMINATION OF WINTHROP HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 20, 1886.

GENERAL: In compliance with instructions contained in your letter of September 27, 1886, I have the honor to submit the following report of a preliminary examination of Winthrop Harbor, Massachusetts, provided for in the river and harbor act, approved August 5, 1886.

The harbor is situated in the northeastern part of Boston Harbor, immediately westward of Winthrop Head. It contains 200 acres, approximately, and is dry at low tide, except in a very narrow slough which penetrates the low land to the northward of Snake Island. The mean range of tides is 9½ feet, approximately. There are several wharves along the south shore of the town of Winthrop, from Pulling Point to Winthrop Brook, which at high tide may be reached by vessels drawing not more than 8 to 9 feet. The bed of the harbor is composed chiefly of loam and sand, with occasional bowlders outcropping near Snake Island, but not in the vicinity of the channel. No hydrographic survey has ever been made of the harbor and no money has been spent by any authority for improvement. The inclosed paper, prepared by the selectmen of the town, is an exhibit of the valuation of property of the town, the condition of the harbor, and the character of the improvement solicited by the citizens. The narrow-gauge railroad, which runs through Winthrop to Point Shirley, carries no freight, and all the town supplies, consisting of coal, lumber, brick, and mercantile articles, when not transported by barges, are carted over dirt roads from East Boston or Chelsea.

The population interested in the improvement numbers 5,000 souls, approximately, and the real and personal property is estimated at $2,250,000. The back channel between Point Shirley and East Boston has from 9 to 16 feet at low water, and by opening a narrow channel with 6 feet at low water through Winthrop Harbor to the northward of Snake Island, it will be practicable for small vessels or scows to pass, at all stages of the tide, from Winthrop wharves to Boston wharves by following the cross channel north of Apple Island and entering the main ship channel by the Bird Island Channel.

As Winthrop Harbor forms part of Boston inner harbor, and is only 2 miles distant from the main ship channel by a navigable channel

having 15 feet at low water, I am of the opinion that the citizens of Winthrop are entitled to relief, and that, therefore, the harbor of Winthrop is worthy of improvement.

I recommend a survey of the harbor at an expense not exceeding $600, and an allotment to that extent is asked, provided the project is approved.

Very respectfully, your obedient servant,

G. L. GILLESPIE,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

WINTHROP AND ITS WATER COMMUNICATIONS.

The town of Winthrop is in the county of Suffolk, State of Massachusetts, upon whose shores a large and flourishing business might be maintained, which would have a vital relation to the prosperity and growth of the country. It is a subject of national as well as local interest. The many advantages of a sea-port town lies in the saving effected in the transportation of material such as are used for manufacturing purposes, and would be particularly so in the case of Winthrop, as we have no communication whatever, except one, a narrow-gauge railroad for passengers only. The town has a frontage upon the sea of 7 miles, which, if it could be made available by a channel sufficient to take in light-draught vessels, would greatly lessen the cost of all materials that are used in manufacture or building. The excavation of the channel it is believed could be done at a trifling cost compared with the benefits to be derived.

This harbor is free from rocks and obstructions of every kind; its bottom is a bed of mud some 5 feet deep, resting upon sandy soil.

The harbor is well sheltered on all sides, and is a safe place for anchorage while waiting for favorable winds or tide.

The project asked for is the making of a channel, so as to have a depth of 5 feet at mean low water, with a width of 75 feet.

Winthrop, at the present time, is growing more rapidly than any other town in the State. The following will show the increase in population and buildings in Winthrop alone during the past years:

Population in June—	
1880	2,050
1885 (over)	5,000
Number of dwellings in—	
1880	213
1885	558
Increase	345

This does not include stables, stores, hotels, two public halls, and other buildings erected for manufacturing purposes.

In 1874—twelve years ago—there were 430 parcels of land in the town of Winthrop, and at the present time there are 2,509 parcels. There were at that time 168 owners; now there are 664. The number of public streets were 9; now there are 29. The number of private ways then were 16; now there are 89. At that time there were 131 houses; now there are 619.

The following is the increase in valuation within the last two years:

Personal estate in—	
1883	$46,685
1885	59,950
Increase	13,265
Real estate in—	
1883	1,784,595
1885	2,193,500
Increase	408,905

The above will show a wonderful progress, and all with a very insufficient railroad communication. The present narrow-gauge runs on the north side of the town, and those persons living on the south side have to resort to barges. Three thousand tons of coal are consumed annually, every pound of which has to be carted from East Boston. The same may be said of the building material that is used in the town, such as lime, timber, bricks, and granite. All this heavy material has to be carted over the road, which very naturally increases the cost at least 10 per cent.

A few reasons why this channel should be constructed:

Because it is a public necessity and will prove of great advantage to the town and country.

Because the industry of the town demands it, which is composed at the present time of curriers, torpedo manufacturers, boat-builders, carpenters and builders, wheelwrights, carriage painters, etc.

Because with water communication it is safe to predict that the population and taxation would be doubled inside two years.

Because in a sanitary point of view, if a channel was cut through the flats it would prove a natural drain, and carry off the refuse matter which is brought in by the tide and left to rot on the flats to the detriment of the health of the inhabitants.

In addition to the before-mentioned reasons why we hope Winthrop Harbor will be deemed worthy of the improvement asked for, we will add that the town of Revere, which adjoins and is tributary to Winthrop for its water communication, contains a population much greater than the latter town, and is joined in Winthrop in the petition to have Winthrop Harbor channel made available for commercial purposes.

EDMUND S. READ,
STEPHEN S. SMITH,
SAMUEL G. IRVIN,
Board of Selectmen, Town of Winthrop, Mass.

SURVEY OF WINTHROP HARBOR, MASSACHUSETTS.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 28, 1887.

GENERAL: In compliance with instructions contained in your letter of March 16, 1887, I have the honor to transmit herewith a report of Mr. Sophus Haagensen, assistant engineer, on the survey of Winthrop Harbor, Massachusetts, made to comply with the provisions of the river and harbor act approved August 5, 1886.

A tracing of the survey is also transmitted, upon which has been indicated the proposed project for improvement.

The preliminary report on this harbor, dated November 20, 1886, to which attention is respectfully invited, gives the essential features of the harbor, and my reasons for recommending the survey. It will not be out of place to repeat that the southern side of the flats constituting the harbor is skirted by a back channel having 9 to 16 feet, mean low water, which extends from Point Shirley to East Boston, and which has two navigable connections with the main ship-channel through Boston Harbor.

The harbor, so called, measures 350 acres of tidal flats, which are generally 2 feet above mean low water, over which are scattered a few bowlders, lying chiefly near Snake Island. It is traversed by two small tidal depressions or channels, in which the depth of water varies from 6 feet to 0, mean low water. The greater of these depressions lies on the east side of Snake Island, adjacent to Point Shirley, and the project for the improvement proposes to convert this depression into a navigable channel to connect Rice's Wharf with the back channel, so that vessels of small draught may conveniently reach the town of Winthrop, at all stages of the tide, by way of the Bird Island Channel.

The proposed channel will be 3,900 feet long, 50 feet wide, and 6 feet

deep, mean low water, and its excavation will require the removal of 64,000 cubic yards of sand and soft clay, at an estimated cost as follows:

Dredging 6,400 cubic yards sand and clay, at 25 cents per cubic yard	$16,000
Contingencies of engineering, etc	1,600
Total	17,600

An appropriation of $17,600 is recommended for the proposed improvement. The population interested in the improvement is 5,000 souls, and the estimated value of the real and personal property represented is estimated at $2,250,000.

I respectfully invite attention to the accompanying report of Mr. S. Haagensen, assistant engineer, for the details of the survey and the general description of the harbor and its approaches.

The existing commerce of the harbor is nominal.

Winthrop Harbor, Massachusetts, is in the collection district of Boston, Mass., of which Boston is the port of entry, and the nearest light-house is situated upon Long Island Head, Boston Harbor, Massachusetts.

Very respectfully, your obedient servant,

G. L. GILLESPIE,*
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF MR. SOPHUS HAAGENSEN, ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
Boston, Mass., November 2, 1887.

COLONEL: I have the honor to report upon the survey of Winthrop Harbor, Massachusetts, made in April, 1887, in pursuance of your instructions. Also to submit a map of the survey, drawn to a scale of 1 : 6000.

TOPOGRAPHY.

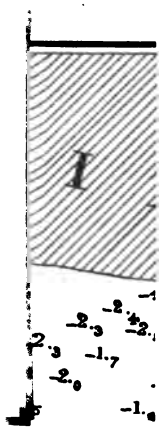
The accompanying map is reduced from the original plot of the survey, which was drawn to a scale of 1 : 3000. A base-line 2,150 feet long was measured on the beach connecting Point Shirley with Great Head. Eight triangulation points were located and occupied, and from these the details of the survey were developed. The point K of this survey is the same as the United States Engineer station at Great Head (also U. S. Coast Survey △ point); it is marked by a square stone post. By sights from this point to the △ point at Governor's Island the survey was connected with the general survey of Boston Harbor.

The high-water and wharf lines from Bartlett's Pier to Rice's Wharf, Snake Island, and part of Point Shirley, were located by us; the rest of the high-water line shown on the map is drawn in by enlarging U. S. Coast Survey manuscript map.

HYDROGRAPHY.

The area covered by our soundings extends from the 18-foot contour of the channel south of the harbor up to the Pile Bridge at Ocean Spray, and is about 350 acres. A fan of twenty lines was laid out, and an aggregate length of 13.1 miles of these lines were run, upon which 2,948 soundings were taken. Of this number 505 were located by transit intersections from shore stations. Nine borings were made in the channel east of Snake Island.

The soundings on the map, selected from the above, refer to mean low water, and are expressed in feet and tenths; those expressed in feet and quarters are taken from the United States Commissioner's survey of Boston Harbor (A. Boschke, 1861), and also refer to mean low water. Two of the lines of the present survey were extended across the channel to Apple Island Flats, to compare with United States Commissioner's map.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TIDES.

The tides are the same as for Boston lower harbor, viz:

	Feet.
Mean rise or fall of tide	9.4
Extreme low water observed	—2.5
Extreme high water observed	12.2

The tide-staff used in the survey was placed on the United States Wharf at Lovell's Island.

The bench-mark is a copper plug in a stone post 350 feet east of the United States Wharf at Lovell's Island, and is 17 feet above mean low water.

DESCRIPTION OF THE HARBOR AND ITS APPROACHES.

Winthrop Harbor is a tidal harbor, mostly flats in elevation 2 feet above mean low water, inclosed by the high hills of the town on the north and by Great Head and Point Shirley on the east. This triangular area contains about 350 acres south of the Pile Bridge; north of this there is about 110 acres of flats and salt marshes draining into the harbor.

The greatest depression in the flats follows the easterly shore, becomes a low-water channel 1,500 feet below the bridge, and continues to deepen for a length of 2,800 feet to the edge of the flats passing between Snake Island and Point Shirley. For the last 1,600 feet the 2-foot channel is continuous, deepening to 6 feet at the junction with the channel limiting the harbor on the south.

To the west of Snake Island there is another lesser gully. Borings show the flats to consist of sand, mud, and soft clay, to a depth of 8 feet below mean low water. West of Snake Island are many scattered bowlders.

The flats slope abruptly from low water to 18 feet depth, and from the northerly edge of the 1,500-feet-wide channel between Winthrop Harbor and Apple Island Flats. This is the principal water-way for the large tidal basin known as East Boston Flats, with many branching channels and gullies.

It is entered directly from Broad Sound through Shirley Gut with 15 feet at mean low water, and connects with the main ship channel of Boston Harbor by channels east and west of Apple Island; the former with 15 feet at mean low water to President Roads, 1 mile distant, and the latter with 17 feet at mean low water to upper middle channel, 2 miles distant, *via* Apple Island and Bird Island channels.

Very respectfully, your obedient servant,

SOPHUS HAAGENSEN,
Assistant Engineer.

Lieut. Col. GEO. L. GILLESPIE,
Corps of Engineers, U. S. A.

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. Doc. No. 86.

NEW BEDFORD HARBOR, MASSACHUSETTS.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, report of the examination and survey of New Bedford Harbor, Taunton River, Massachusetts.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 10, 1883.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 6th instant from the Chief of Engineers, with copies of reports from Maj. W. R. Livermore, Corps of Engineers, giving the results of surveys of New Bedford Harbor and of Taunton River, Massachusetts, and also copies of reports on the preliminary examinations of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 6, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Maj. W. R. Livermore, Corps of Engineers, giving the results of surveys of New Bedford Harbor and of Taunton River, Massachusetts, made to comply with the requirements of the river and harbor act of August 5, 1886, together with copies of the reports on the preliminary examinations of the same, as therein required.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION OF NEW BEDFORD HARBOR, MASSACHUSETTS.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report of the preliminary examination of New Bedford Harbor, Massachusetts, provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 13th instant.

In the years 1875–'76 there was appropriated for the improvement of New Bedford Harbor the sum of $20,000, which was expended in excavating a channel 15 feet deep from the vicinity of the wharves to the deep water just above Palmer's Island.

Since that time the draught of the steamers plying between New Bedford and New York has increased, and I am informed that they not only now touch the bottom in this channel, but that in the channel below Palmer's Island, which was not included in the former improvement, there is not sufficient water at low tide for the commerce of the port.

New Bedford is an important port of entry. It is largely interested in manufactures and has an extensive commerce in addition to its whale fisheries.

In a petition from citizens of New Bedford, which was published in the report of the Chief of Engineers for 1875, I find the statement that in the six months from April to October of 1874, 1,777 steamers, 56 ships, 13 brigs, 2,545 schooners, 1,025 sloops, in all 5,416 vessels, passed Palmer's Island light-house in New Bedford Harbor, and that there were engaged in the whaling business 88 vessels requiring a depth of about 16 feet of water. I have no later information respecting the commerce of New Bedford, but it has doubtless largely increased, especially in respect of steamers.

I am inclined to the belief that the deepening of the channel desired can be done at comparatively small cost, and in view of the interests involved I am of the opinion that the harbor is worthy of further improvement.

I estimate the expense of the necessary surveys at $600, if authority to make them can be issued in time for completing them before Christmas, but if later the expense will be much increased by reason of delays by bad weather and ice.

Very respectfully, your obedient servant,

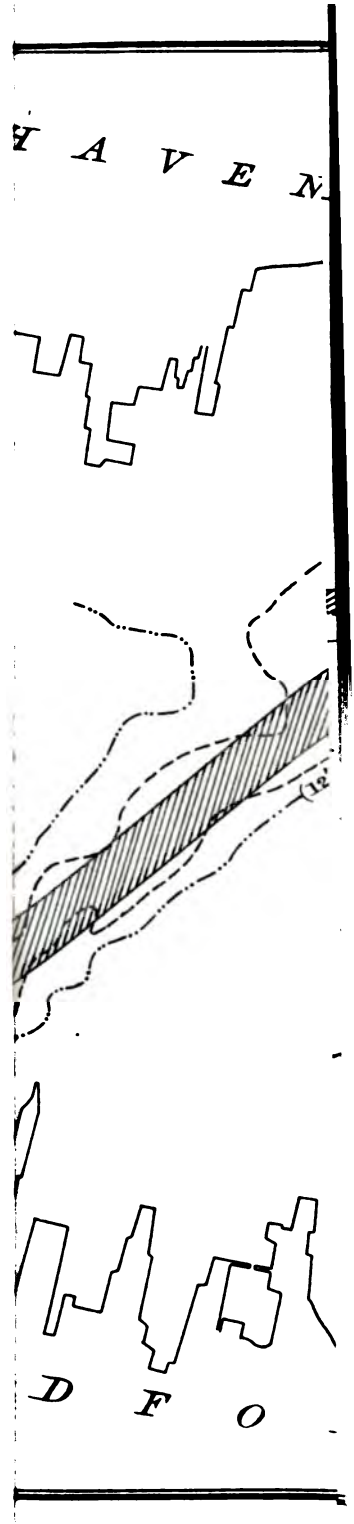
GEORGE H. ELLIOT,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

SURVEY OF NEW BEDFORD HARBOR, MASSACHUSETTS.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., October 17, 1887.

SIR: I have the honor to submit the following report on the survey of New Bedford Harbor, together with an estimate of the cost of its improvement.


H A V E N
D F O

is harbor is an estuary of Buzzard's Bay, forming the port of the s of New Bedford and Fairhaven, Mass.

ıe survey was made on the 5th, 6th, and 7th of October.

undings were carefully taken from the deep water off Clark's t to the wharves of New Bedford near the bridge. These sound- were reduced to mean low-water level, determined by observations ne month of tide-gauge at New Bedford. Borings were also taken ughout the entire length of the proposed channel to a depth of 20 at mean low water.

will be seen from the accompanying sketch that vessels drawing 15 feet of water cannot enter the harbor at mean low water.

is proposed to excavate a channel 200 feet wide and 18 feet deep. general position of this channel and of the areas to be excavated shown on the sketch. The borings show that the material to be lged consists of mud, sand, and gravel.

s it appears from the following estimate that the total cost of this ınel will amount to less than $35,000, I have the honor to recom- d that this amount, all of which can be profitably expended during fiscal year ending June 30, 1889, be appropriated.

he lower part of the channel has been laid out in one straight reach, axis of which passes through Palmer's Island light-house, so that ıels entering the harbor can run directly for it. The two upper ches are so laid out as to involve the least amount of excavation.

ı the years 1875–'76 there was appropriated for the improvement of Bedford Harbor the sum of $20,000, which was expended in ex- ıting a channel 15 feet deep from the vicinity of the wharves to the water just above Palmer's Island. Since that time the draught of ıteamers plying between New Bedford and New York has increased, vessels of 15 feet draught not only now touch the bottom in this ınel, but in the channel below Palmer's Island, which was not in- ed in the former improvement, there is not sufficient water at low for the commerce of the port.

ıny vessels and barges of much greater draught than 15 feet are ıle to carry their full cargoes.

ıw Bedford is adapted by its situation to become a commercial of great importance. It was once the great center of the whaling stry in America, and is still one of the largest and most flourish- cities in New England, both in respect to its commerce and manu- ıres.

w Bedford is a port of entry. The amount of revenue collected at New Bedford ıe fiscal year ending June 30, 1887, was $29,023.98.

ESTIMATE OF THE COST OF THE IMPROVEMENT.

ıundred and seventeen thousand cubic yards, measured in place, of mate- to be dredged and dumped south of Egg Island, at 27 cents	$31,590
10 per cent. for contingencies	3,159
Total	34,749

Very respectfully, your obedient servant,

W. R. LIVERMORE,
Major of Engineers.

ıe CHIEF OF ENGINEERS, U. S. A.

COMMERCIAL STATISTICS, NEW BEDFORD, MASSACHUSETTS.

The harbor-master of New Bedford reports the arrival of eight sailing vessels of over 100 tons burden per day throughout the year, 2,920, about 200 of which draw over 15 feet of water.

Mr. Charles W. Agard, agent of the Philadelphia and Reading Coal and Iron Company, reports vessels carrying coal, 180.

Old Colony Railroad and Steamboat Company's steamers make tri-weekly trips to New York.

New Bedford, Martha's Vineyard and Nantucket Steamboat Company make 600 trips annually with 5 steamers between the points named.

The following freight is reported as being received annually by vessels by the firms named.

Charles W. Agard, agent Philadelphia and Reading Coal and Iron Company, reports total coal received, 273,200 tons.

Charles S. Paisler and William A. Tillinghast report lumber received in 47 vessels of 160 tons, 8,000,000 feet.

William B. Fisher, agent for Old Colony Railroad and Steamboat Companies, report from New York line of steamers, cotton, over 35,000 bales; miscellaneous freight, 60,000 tons.

William F. Nye reports oil by schooners, 3,000 barrels; cases of bottled oil by steamers, 14,000.

Mr. Charles S. Kelley, vice-president of board of trade, states that New Bedford has inhabitants about 40,000; banking capital, $4,500,000; manufacturing capital (employed in 120 manufactories), $11,500,000; whalers of a tonnage of 28,291 tons, 75.

It is the third city in the United States in point of cotton manufactures.

PRELIMINARY EXAMINATION OF TAUNTON RIVER, MASSACHUSETTS.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., November 26, 1886.

GENERAL: In compliance with the instructions contained in Department letter of the 28th October last, I have the honor to submit the following report of the preliminary examination of Taunton River, Massachusetts, provided for in the river and harbor act of Congress of August 5, 1886, and made by me on the 19th instant.

Taunton River rises in Norfolk County, Massachusetts, and empties into Mount Hope Bay, a name given to that part of Narragansett Bay which lies mainly in Massachusetts. It is 44 miles in length, measured along its course.

It has been improved by the United States under appropriations made n the years 1852–'84, amounting to $160,000.

The object of the improvement is to deepen and widen the channel leading to the city of Taunton, at the head of navigation, which requires large quantities of coal, iron, clay, moldings, sand, and other heavy articles for its manufactures, depending largely on water transportation, so that vessels of 11 feet draught can reach the city at high water.

In its original condition the channel was narrow and obstructed by bowlders, and from Berkley Bridge to Taunton the depth was not, in places, more than 5 feet at mean high water. A vessel of 30 tons burden was as large as could go up to Taunton.

The project under which the work is being carried on provides for a channel 60 feet wide and 11 feet deep from Weir Bridge to the ship-yard; a channel 80 feet wide (100 feet at the bends) and 11 feet deep from the ship-yard down to, and through the Needles and Brigg's Shoal; thence to Berkley Bridge, a channel of the same width and 12 feet deep, and from Berkley Bridge to the deep water at Dighton the

channel was to be 100 feet wide and 12 feet deep. The depths are estimated from high-water. The ledge which crosses the bottom of the river at Peter's Point and the numerous bowlders which lay on the bottom and sides of the channel from Taunton to Dighton were to be removed.

A plat of the river, showing the improved channel, was published in the Annual Report of the Chief of Engineers for 1884, page 606.

With the exception that but 40 feet of the 60 feet of width could be dredged between the bridge at Weir and the ship-yard, on account of interfering with private property, and that, on account of the hardness and depth of the material at the sides, the 80-foot channel was not in all cases dredged to its full width, the channel down to Berkley Bridge has been completed.

The major part of the dredging below the bridge has been done, but this part of the channel still lacks in width at some places.

The last appropriation for this work, $26,500, made by the act of July 5, 1884, is not yet expended. The entire work from Berkley Bridge down, contemplated to be done, is now under contract, and the major part of it, including the excavation of a channel through the ledge at Peter's Point, to a depth of 12 feet at mean high water with a width of 100 feet, has been completed.

There remains to be done under this contract the completion of the deepening and widening of the channel below Berkley Bridge, by dredging. The work is to be paid for by the cubic yard, measured in scows, and just how much of the funds available will remain after the completion of the current contract can not now be stated with accuracy, but unless the filling in of the channel since our last survey, especially by the freshet of February, 1886, which broke the embankment of the Old Colony Railroad opposite Wikamount, and shoaled the water there, is greater than I anticipate, there will remain between $3,000 and $4,000 for additional work above the bridge.

The following is the work which the safe navigation of the river requires to be done above the bridge, and between it and Taunton:

(1) The removal of Pioneer Rock, a large bowlder estimated to contain from 60 to 70 tons.

(2) The further deepening and widening of the channel at several points from just below Pioneer Rock to a point just below Three Mile River, especially at Brigg's Shoal.

(3) The cutting off of a sharp bend and enlargements of the channel at the mouth of Three Mile river.

(4) The enlargement of the channel at Burt's Turn and at the Fish Place.

(5) The removal of a deposit of sand in the channel at Weir, the head of navigation, caused by the freshet before referred to.

(6) The removal of a few other bowlders in and near the channel between Berkley Bridge and Weir.

My judgment is that the river is worthy of the further improvement above referred to, and that the remainder of the current appropriation that will be available at the completion of the present contract will suffice to pay for it, but this can not be determined until a survey is made, which I estimate will cost $300.

Very respectfully, your obedient servant,

GEORGE H. ELLIOT,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

SURVEY OF TAUNTON RIVER, MASSACHUSETTS.

ENGINEER OFFICE, UNITED STATES ARMY,
Newport, R. I., November 21, 1887.

SIR: I have the honor to submit the following report on the survey and further improvement of Taunton River, Massachusetts, together with map of survey just completed and estimate of the cost of improvement.

This river rises in Norfolk County, Massachusetts, and empties into Mount Hope Bay, a name given to the northeast part of Narragansett Bay. It is 44 miles in length, measured along its course.

The survey was made between the 15th and 30th of October. Soundings were carefully taken over the areas mentioned in Colonel Elliot's report of the preliminary examination of the river.

These soundings are referred to mean high water, the plane of reference used on the Taunton River.

Borings were also taken over the areas surveyed.

The map of the survey herewith submitted shows the areas over which the soundings and borings were taken with the channel, as contemplated in the approved project, in a broken and dotted line, and the 11-foot contour in a broken line. On figure 4, at the head of navigation, the 10-foot contour is also shown in a dotted line.

The areas in which it is proposed to dredge are shaded, and are embraced between the 11-foot contour and the channel lines.

There is also on the same sheet, on a smaller scale, a map of the river from Weir to Somerset, on which the location of those portions of the river surveyed are indicated.

The river has been improved by the United States under appropriations made in the years 1852–'84 amounting to $160,000.

The object of the improvement is to deepen and widen the channel leading to the city of Taunton, at the head of navigation, which requires large quantities of coal, iron, clay, molding sand, and other heavy articles for its manufactures, depending largely on water transportation, so that vessels of 11 feet draught can reach the city at high water.

In its original condition the channel was narrow and obstructed by bowlders, and from Berkley Bridge to Taunton the depth in places was not more than 5 feet at high water. A vessel of 30 tons was as large as could go up to Taunton.

The project under which the work is being carried on provides for a channel 60 feet wide and 11 feet deep from Weir Bridge to the ship-yard; a channel 80 feet wide (100 feet at the bends) and 11 feet deep from the ship-yard down to and through the Needles and Brigg's Shoal; thence to Berkley Bridge a channel of the same width and 12 feet deep, and from Berkley Bridge to the deep water at Dighton the channel was to be 100 feet wide and 12 feet deep. The depths are estimated from high water.

The ledge which crosses the bottom of the river at Peter's Point and the numerous bowlders which lay on the bottom and sides of the channel from Taunton to Dighton were to be removed.

A plat of the river showing the improved channel was published in the Annual Report of the Chief of Engineers for 1884, page 606.

Colonel Elliot states in his report of the preliminary examination of this river November 26, 1886, as follows:

With the exception that but 40 feet of the 60 feet of width could be dredged between the bridge at Weir and the ship-yard, on account of interfering with private property, and that, on account of the hardness and depth of the material at the sides, the 80-foot channel was not in all cases dredged to its full width, the channel down to Berkley Bridge has been completed.

the past season a small amount of ledge rock above the plane
stom of the channel was uncovered by the dredging below
oint. After the removal of this the channel below Berkley
ill be completed.

ect of the further improvement of the river is the widening
foot channel to its full dimensions where it is too narrow, the
of the bowlders obstructing the channel between Berkley
nd Taunton, and the removal of the small amount of ledge rock
annel below Peter's Point.

eas in which it is proposed to dredge are shaded on the accom-
map and are in the following localities:

the points indicated from just below Pioneer Rock to about
above the mouth of Three-Mile River.

Burt's Turn.

Pond Rock's Shoal.

the upper part of the channel at Weir Village.

is also proposed to remove the small amount of ledge rock un-
in dredging between Peter's Point and Dighton, and to remove
lders in and near the channel between Berkley Bridge and

stimated cost of completing the approved project is $14,051.
nannel as projected is shown on the map by a broken and dotted
here is also shown, in the localities referred to above, a full line
ng a channel 60 feet wide in the narrowest places and 90 feet
the bends, which it is estimated could be completed for $4,500

Estimate for further improvement of Taunton River, Massachusetts.

12,534 cubic yards of material, including the removal of bowlders, r cubic yard	$12,534
; ledge below Peter's Point, 6 days of vessel and crew, at $40 per	240
	12,774
r cent. for contingencies, etc	1,277
	14,051

COMMERCIAL STATISTICS.

ipts at Taunton, Mass., via Taunton River, for year ending March 1, 1887.

	barrels	38,500
	bushels	1,300,000
	feet	8,700,000
	tons	228,000
	bales	26,000
	tons	31,000
and	do	22,000
	do	27,000
chandise	do	23,000

ery respectfully, your obedient servant,

W. R. LIVERMORE,
Major of Engineers.

HIEF OF ENGINEERS, U. S. A.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { Ex. DOC. No. 87.

PUNTA RASSA HARBOR, FLORIDA.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examinations and surveys of Saint Augustine, Fla., for a deep-sea channel on the outer bar, and of Punta Rassa Harbor, Fla.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 11, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 9th instant from the Chief of Engineers, with copies of reports from Capt. W. M. Black, Corps of Engineers, of the result of surveys at Saint Augustine, Fla., for a deep sea channel on the outer bar, and of Punta Rassa Harbor, Fla.; also copies of the reports on the preliminary examinations of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY.
Washington, D. C., January 9, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Capt. W. M. Black, Corps of Engineers, of the results of surveys at Saint Augustine, Fla., for a deep-sea channel on the outer bar, and of Punta Rassa Harbor, Fla., made under his direction, to comply with the requirements of the river and harbor act of August 5, 1886; together with copies of the reports on the preliminary examinations of the same, as therein required.

Very respectfully, your obedient servant,

J. C. DUANE,
Brig. Gen., Chief of Engineers.

Hon. WM. C. ENDICOTT,
Secretary of War.

PRELIMINARY EXAMINATION AT SAINT AUGUSTINE, FLORIDA, FOR A DEEP-SEA CHANNEL ON THE OUTER BAR.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz: * * * Saint Augustine, for a deep-sea channel on the outer bar.

Saint Augustine harbor lies on the east coast of Florida, about 47 miles south of the St. John's River. It is formed by the junction of two rivers, or rather salt-water lagoons, the Matanzas and Tolomato Rivers, which run parallel to the coast, and there unite to break through the line of sand-hills into the sea. The total length of the Tolomato River is about 20 miles, and of that part of the Matanzas River which receives and discharges across the Saint Augustine bar 12 miles. The San Sebastian River, another lagoon, almost surrounds Saint Augustine, and opens into the Matanzas River about 3 miles from its mouth. These lagoons vary in depth from 20 to 30 feet for several miles from the mouth and in width from 300 to 500 yards. They form large tidal basins, filled and emptied through the channels across the bar. The rise of tide at Saint Augustine varies from 4 to 6 feet, and the currents generated have maintained two or more channels across the bar with a least depth of from 6 to 9 feet at low water. The positions of these channels are continually shifting between the south end of the mainland east of the Tolomato River (north beach) and the cape on St. Anastasia Island, 2¾ miles to the south. A Spanish map, dated 1791, shows the same conditions and depths. The harbor forms an excellent sheltered anchorage, but the shifting nature of the bar and the shallow water on its crest has presented so many difficulties to mariners, that the commerce of the port has been greatly hampered, and as, until recently, the city has had no railroad communications with the interior, it has been limited to the necessary supplies for Saint Augustine. Saint Augustine was founded in 1665, and during the Spanish possession was the capital of East Florida, and as such its most important city. After the cession to the United States the city remained quiescent for many years, with little or no growth. Within the past few years it has greatly developed. It has been connected with the St. John's River and the interior by three lines of railroad: one to Jacksonville, one to Tocoi, and one to Palatka, giving it good rail connection with all parts of Florida. New hotels and business houses have been erected, and large amounts of capital have been attracted to the city. From 1870 to 1880 the increase of assessed valuation of property was $79,845; while from 1880 to 1886 the increase was $544,538. The valuation now is $1,369,588, and this is far below the actual selling price of the property.

The principal business interests of Saint Augustine are at present her hotels and lumber-mills. The hotels (not counting private boarding-houses or residences of winter visitors) have a capacity of 2,565 persons, and during the past year served 47,465 guests. The lumber business is yet in its infancy. There are two mills, with a total capacity of 16,165,000 feet per year. The forests from which the supply is drawn are easy of access, and have been but little cut into. Until lately the output of the mills has been entirely used at home. There are a number of stores doing a general mercantile business. Their de-

velopment, as well as that of the lumber interests, has been obstructed by the lack of water transportation.

The freight receipts for the year ending November 1, 1886, are—

	Tons.
By water	15,659
By rail	96,979
Total exports	8,764

The receipts comprised general merchandise, food supplies, ice, brick, and building materials. The exports were lumber.

During the year three vessels were aground on the bar. One was a total wreck, and the others sustained severe losses.

I would invite attention particularly to the statement of the relative charges for freight in bulk from New York to Fernandina, Jacksonville, and Saint Augustine, given in the appended report of the Board of Trade of Saint Augustine, as showing the great disadvantages under which the merchants of that city labor.

The Atlantic Coast Canal connects this harbor with the Halifax and Indian rivers. With the canal finished and the harbor so improved as to permit safe and free passage of coasting steamers, this would be the natural line for the transportation of the large and increasing quantity of fruits and vegetables raised along these rivers. This, with the railroad connections with central and south Florida *via* Palatka, the Jacksonville, Tampa and Key West, and the Florida Southern railroads and their feeders, together with the safety of the port and its proximity to the ocean, will all tend to make Saint Augustine the natural and best point of export for northern markets for the fruit and vegetable trade.

I would further respectfully invite attention to the report of the Saint Augustine Board of Trade and to the letters of Mr. R. F. Armstrong and Messrs. W. Lyon & Co., appended.

For all the reasons stated I deem the harbor worthy of improvement.

Its bar is of sand and of a character similar to that at the mouth of the St. John's River. It presents no unusual difficulties.

The estimated cost of a survey on which to base a detailed estimate for its improvement is $4,000.

Respectfully submitted,

W. M. BLACK,
First Lieut. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

STATEMENT OF SAINT AUGUSTINE BOARD OF TRADE.

	Tons.
Statement of freights received at the port of Saint Augustine, Fla., from schooners from the several American ports for the year ending November 1, 1886	15,659.44
Freight received from the railroads during the same period	96,979.00
Total amount received and discharged from all points	112,638.44
Amount of exports	8,764.00

The merchants and shippers complain of the difficulties they encounter in engaging schooners to ship merchandise to this port. The result is, we are compelled to pay heavy insurance and high tariff on transportations. By deepening our bar we would increase the amount of freights at least 100 per centum, as this would be the northern terminus of the Coast Canal, which would distribute and receive freights from Indian River and Biscany Bay, and develop territory now unknown to the commercial world. Not only would our freight business be increased to an incalculable degree, but the rate of insurance and freight would be greatly reduced. By deepening our bar our merchants would not suffer the loss they now do from delays of goods in transit.

The estimated loss in delays during the past year and the uncertainty of vessels coming to this port is $65,000.

On account of the long delays in transit to and from this port, many articles of commerce, both of an export and import character, can not be dealt in, which is a great detriment, not ony to the city of Saint Augustine, but to the State at large.

The uncertainty of our bar and the dangers connected with our harbor caused discriminations in freight from New York and other northern points to this port, which is detrimental to our commercial interests. For instance:

	Per ton on bulk.
From New York to Fernandina	$0.75
From New York to Jacksonville	1.50
From New York to Saint Augustine	2.50

This puts merchants selling on a close margin to great disadvantages when competing with neighboring merchants in sister ports.

Assessed valuation of property of Saint Augustine, for the year 1886, as shown on the assessor's books	$1,369,588
Assessed value for—	
1880	825,050
1870	745,205

The above valuations are not one-fourth the actual value of property; for example, property assessed at $500 sold for $5,000.

In another case, a piece of property that had been improved to the amount of $350,000 stands valued at $30,000.

There is a gradual advance in the valuation of property and unprecedented increase during the past year in commerce. We have a large number of new commercial houses, and the older ones have increased their capacity from 100 to 300 per cent.

We have one new firm that will demand from twelve to fifteen schooners of 300 tons to do their business, and they claim if the bar is improved so they can receive vessels drawing 15 feet of water, it will lower their insurance 50 per cent. and their rate on freight 33 per cent.

There is another company that will establish a business here with a capital stock of $300,000 and employ a large number of hands in case the bar is deepened and the harbor improved.

If the harbor remains as it is the East Florida Coast Canal will pass us by and make the port only a way station.

We claim the improvement of our harbor and deepening the bar at this port as a vital necessity to us, and not only to us but the State at large.

HOTEL ACCOMMODATIONS.

Our hotels have capacity to accommodate 2,565 guests. We find, by looking over their registers, they served 47,465 guests. This will not include the number who are in private houses and who have winter houses in our city.

MANUFACTURE OF LUMBER.

In this line we are in our infancy. Our timber interests have not been developed as in other parts of the State. We have a great variety of timber. It consists of pine, cypress, cedar, American mahogany, magnolia, oak, and hickory. Our mills have a capacity of 16,165,000 feet per year. We have as fine timber as the world affords for the manufacture of wagons, carriages, agricultural implements, and all kinds of furniture.

SCHOOLS.

Our public schools have 565 pupils enrolled, and show an average attendance of 435. Besides our public schools we have four private schools, including the St. Joseph Academy. They are well attended and doing good work. We have noticed to a marked degree an increasing interest in our schools. The attendance is much larger than at any time during the past five years; also more and better work is being performed in the several departments.

We have a good corps of teachers; for the most part teaching has been their life-work. They have engaged in teaching as a profession, hence the success in our schools.

CANALS.

We would call the attention of the board to articles being published in regard to a ship-canal across the strait connecting the Gulf of Mexico with the Atlantic Ocean.

By referring to an old survey made by the Spanish, it was thought that an enterprise of that kind was feasible, and of vital importance to the commerce of the country from two standpoints: First, a short line from the western part of the Gulf, including the Mississippi River, to the Atlantic cities and Europe. Second, it would make transportation safer, thereby lowering the rates of insurance on vessels and cargoes. This canal would be about 110 miles in length, and requires about 32 miles of cutting.

From Saint Augustine to the mouth of the Withlacoochie River is the shortest point across the peninsula and the natural route for the canal.

As a board of trade, we believe it our duty to call attention of parties interested in such matters to the natural advantages this line has over all others; also the peculiarities of construction, as the great part of the cutting will be in a limestone region and free from quicksands.

The above has been indorsed and recommended by the Saint Augustine Board of Trade.

JOHN T. DISMUKES,
President.

LETTER OF MR. R. F. ARMSTRONG.

HALIFAX, N. S., *November* 12, 1886.

DEAR SIR: Your favor of the 6th instant, from Saint Augustine, with inclosure—Lieutenant Black's letter of November 1 instant—has just reached me. * * * I am glad of the opportunity of complying with your wishes, and therefore submit the following:

Saint Augustine, from her natural position and situation on the Atlantic sea-board, presents her claims—

1. As a commercial port.
2. As a harbor of refuge.
3. As the terminal of an interoceanic canal; and
4. As a naval rendezvous in time of war.

In considering the vast increase of the southern coastwise trade, and the building up of such magnificent lines of steamships as are now required to carry it on, it is pertinent to inquire into the causes which have contributed hereto, and, while the great staple of the South has no doubt been the main support of the steamship lines, the early vegetable production has been no mean factor. It is curious, as well as instructive, to trace the rise and successive movements of the "early vegetable business," and from its small beginnings to contemplate its present mighty bulk and huge proportions. Southern New Jersey and Delaware, by reason of their warmer climate and more generous soil, were enabled to advance the season of fruition by a week or ten days, and, by supplying the market of New York and Boston in advance, to reap the benefits of the higher prices for first fruits. As competition increased, and the demand exceeded supply, latitude became a factor, and the knowing ones among these truck farmers moved the seat of their operations to the country around Norfolk and Portsmouth, and soon thereafter, for like reasons, the sage-broom fields around Charleston and Savannah were converted into blooming gardens. * * * Transportation kept pace with production, and to "truck farming" more than to any other single cause is to be attributed the success and improvement of such lines of steamships as the Old Dominion, New York and Charleston, Ocean, and Mallory. In pursuit of more sun with which, or rather by the aid of which, to forestall nature in her more gradual developments north, the next advance of its migratory production was to northern Florida, along the line of the Florida Railway and Navigation Company, and here, for the lack of transportation facilities further south, it has rested; but the severe frosts of the last two or three winters have caused a not unnatural disquietude among the vegetable growers, and, after a vain search for that imaginary "frost line," have finally fixed their abode in that section bordering the shores of the Halifax and Indian Rivers. Here the possibility of planting for delivery in the Northern markets upon any day in the year gives to this section an advantage over any other, and, as the soil is exceedingly fertile and climate salubrious, the capabilities of production will only be limited by the transportation facilities. Already we see railroads stretching out their Briarean arms to gather in the bountiful harvest, but if the past experience has taught us anything, it is that these particular products require water transportation.

Norfolk, Charleston, Savannah, and north Florida all have unexcelled railroad facilities, yet we find the steamship lines enjoying a monopoly of the traffic, and the reason lies not so much in the difference of the freights, as in the condition in which the goods are delivered at their destination. Saint Augustine, then, being the nearest deep-water port, is bound to attract this trade, and of right ought to have it. With the completion of the East Coast Canal, a great water highway will be opened

as far south as Lake Worth, and Saint Augustine will have poured into her lap for shipment * * * the large and ever-increasing productions of this section, and the connection, by means of the Saint Augustine and Palatka Railway, with the railway system of south Florida, point to unlimited possibilities in this direction.

* * * * * * *

In considering the future of the trade of the Indian River and south Florida sections, which of necessity, in obeying the immutable laws of trade, the shortest land carriage to deep water must seek an outlet at Saint Augustine. I have not touched upon the production of sugar and the bringing into cultivation of the vast acreage now being reclaimed by the Disston syndicate, nor the possibility of the revival of the indigo and cochineal industries, which thrived so exuberantly under the English régime. Lack of communication has hitherto retarded the development of these countries and industries, but now that these are well established, I think, for reasons presented, we may safely predict for Saint Augustine a future of commercial prosperity. In distance from New York we are considerably south of Savannah, but by reason of the western trend in the coast-line and its proximity of the Gulf Stream to our shores, it is possible for a steamship to make the run from Saint Augustine in the same time as one of equal from Savannah. This annihilation of distance (and I have proved it with the steamship *Newport*) is a great point of delivery of perishable freights, and a knowledge of the fact will aid materially in bringing Saint Augustine to the fore as the future commercial port of Florida. Therefore, considering the advantages she possesses in situation, a deep and well-sheltered harbor, good and increasing inland communications, and a volume of trade only awaiting the opening of her port, I think the time has come for her to shake off her lethargy, write *resurexi* over her gates, and revive the commercial importance of the English occupation (1763–'83), when at one and the same time an hundred sail lay in her capacious harbor.

Saint Augustine, occupying a midway position between the Cape of Florida and Hatteras, should be, by the fostering care of a Government of the people for the people, made a safe harbor of refuge. The commodious, deep, and land-locked inland waters afford ample facilities for vessels of the largest tonnage to ride in safety. * * * With easy, gradual, and safe approaches, and during the stormy season lying under the lee of a constant trade wind, nature seems to have designed this port as a refuge to the tempest-tossed and disabled. Supply always meets demand, and with a good, safe entrance to the harbor, marine railways, dry-docks, repair shops, etc., would spring up, and many a storm racked hulk would owe deliverance to the paternal care of a Government which had at last awakened to the fact that it exercised jurisdiction over nearly 500 miles of coast, along which there is not a single hole into which other than a cat-boat of 0 to 100 tonnage can shove her nose.

My *third* point.—Saint Augustine, as the terminal of an interoceanic canal, is not a chimera, and was considered of sufficient importance by the Government to warrant a preliminary survey. This was conducted under a French engineer, whose name I just now forget, and I understand his report is of record in the Department at Washington. It may not be uninteresting to you to trace the route of this proposed canal, and observe how nearly nature will second man in the enterprise. Then, with the map of Florida before you, go down to the Matanzas River, to Moultrie Creek; up this to its source; thence by a cutting into ——— Creek, which debouches into the St. John's; up this river, up the Ocklawaha into lakes Griffin and Harris, and by a short cutting into Panassoffka, and thence into the Withlacoochie River. * * *

Yours, very truly,

R. F. ARMSTRONG.

HENRY M. FLAGLER, Esqr.,
26 *Broadway, New York.*

LETTER OF MESSRS. W. LYON & COMPANY.

SAINT AUGUSTINE, FLA., *November* 8, 1886.

DEAR SIR: We have not been able to obtain some facts relative to our harbor which we desired to present you at this time, but hope to do so later on. During the year ending November 1, 1886, some twenty-eight vessels, having a total tonnage of 7,627 (being an average tonnage of over 270 tons), entered at and cleared from this port. In addition to this many coasters called here of which no record was made, but from best information attainable it is supposed that there has been a total tonnage passed over our bar—counting all vessels twice, as coming and going—of not less than 20,000 tons.

Three vessels have been aground on the bar. One was a total wreck, two others sustained serious loss—the exact amount cannot be given at this writing—while

others pounded over the bar. The average draught of large vessels has been 10 feet, but much of the time we have had 14 feet on the bar.

Our firm ship merchandise largely from New York. We calculate to have one vessel each month, though at present we are doubling that number. Now, the greatest difficulty we experience in chartering vessels is not for want of water, but for want of confidence in our harbor among vessel owners. They reply to us, when we say "there is plenty of water," that such can hardly be the case, as Government has never expended any money there, and it is not reasonable that there should be a decent channel. So we pay large sums for our vessels when they might come for much less, and, further, at times they will scarcely come at any price.

Now, if Government would do something for us shipments to and from this port would probably be doubled within a year. Our town is prospering wonderfully, but if we had a better harbor it would advance with still greater vigor.

Hoping that you may be able to assist us in the matter, and assuring you of our readiness to render any aid in our power, we remain, sir,

Your most obedient servants,

W. LYON & CO.

Lieut. W. M. BLACK,
United States Engineers.

SURVEY AT SAINT AUGUSTINE, FLORIDA, WITH PROJECT FOR FORMING A DEEP-SEA CHANNEL ON THE OUTER BAR.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., December 12, 1887.

In section 6 of the river and harbor act, approved August 5, 1886, Congress directed that an examination, or survey, or both, of the harbor of Saint Augustine should be made with a view to the formation of a deep-sea channel on its outer bar. On January 5, 1887, the Engineer officer in charge of the district reported that the harbor was worthy of improvement and submitted certain commercial statistics. In Department letter of March 16, 1887, the Engineer officer in charge was directed to make a survey of this harbor and to prepare and submit plans for its improvement.

On May 23, 1887, the field work of the survey was started by a party under the charge of Lieut. D. D. Gaillard, Corps of Engineers. This work was practically completed July 27, and covered as much ground as the funds available would permit, the principal deficiency being in the limited amount of information that could be obtained concerning tidal current velocities and directions. I am much indebted to Lieutenant Gaillard and his party for sustained interest and efficient work, despite the intense heat (at times 112° to 120° F. in the sun) and the other discomforts incident to field work in one of the hottest summers known to Florida. I am further indebted to Lieutenant Gaillard and to Mr. J. H. Bacon, assistant engineer, for their ability and care in working up the results of the survey and in preparation of the maps and plates. For all details of the methods employed in the survey I would respectively invite attention to Lieutenant Gaillard's report inclosed herewith.

DESCRIPTION.

Saint Augustine Harbor is at the mouth of the tidal basin formed by the Matanzas, San Sebastian, and Tolomato or North rivers. These are properly estuaries, sluggish streams with almost no slope, bordered by extensive salt marshes, receiving the drainage of the surrounding country, but dependent on the tidal flow through the entrance at Saint Augustine for by far the greater amount of the water circulating through them. A second break in the coast at Matanzas, 16 miles south of Saint

Augustine, supplies the southern end of the Matanzas River for as far north as the "divide," about 12 miles south of Saint Augustine. Local conditions at times cause a portion of the tidal flow to pass inside, from one inlet to the other, but generally, as far as the measurements taken can show, the volume of water entering each inlet about equals the volume discharged through the same.

The maps of the U. S. Coast and Geodetic Survey show the Saint Augustine tidal basin to contain 34.5 square miles, including the marshes. The average rise of tide is 4.2 feet. The tidal basin for an average rise of 2.1 feet, computed from the measured volume of discharge during one tide, would have an area of 23.1 square miles. The area actually emptied and filled with each tide probably varies between these limits. The harbor proper of Saint Augustine includes that portion of the Matanzas and Tolomato rivers lying within the city limits. North of Fort Marion it has a length of 9,000 feet. The width between the 12-foot contours varies from 200 to 1,400 feet, with an average of 700 feet, and there is an available channel depth of 17.2 feet. South of Fort Marion, for a distance of 9,000 feet, the distance between the 12-foot contours varies from 300 feet to 1,000 feet, with an average width of 600 feet, and a least available depth of 14.9 feet. The San Sebastian River, having a least channel depth of 7 feet, gives access for light-draught vessels to the west side of the city south of the King Street Causeway. The bottom of the harbor is of hard sand or silt throughout, and the anchorage is entirely sheltered.

PAST AND PRESENT CONDITION OF THE HARBOR.

A fac-simile of a map of Saint Augustine Harbor, showing the assault by Francis Drake in May, 1586, was the oldest obtainable map. The shore lines are of little value, but the map is useful as showing that at that time the channel ran close along Anastasia Island. No depths are given. The next map is a fac-simile of one made by "Herman Moll," of London, the exact date of which I am unable to ascertain, but it was probably made some time in the seventeenth century. This map gives the shore lines very roughly, but shows the channel nearly in its present position, and gives 12 feet as the depth across the bar. The comparison with present depths at other places makes it probable that this depth is referred to high water. A fac-simile of a map by "Thomas Silver," showing Governor Oglethorpe's siege of the town in 1740, shows the channel nearly in the same position as in 1882, and gives 9 feet as the depth on the bar.

All the preceding maps show the northern shore of Anastasia Island as running nearly east and west and extending much further eastward than the peninsula. Some allowance must be made for inaccuracy, as they differ considerably in other respects.

Since 1740 maps of Saint Augustine Harbor have been made in the following years: 1791, by the Spanish engineers; 1826, by Lieutenants Serle, Huger, and Brisbane, Third Artillery, under the direction of Brevet Lieutenant-Colonel Perrault, of the Topographical Engineers; 1829, by Lieut. Jefferson Vail, First Infantry, under the direction of Lieutenant-Colonel Perrault; 1862 and 1882, by U. S. Coast Survey.

These six maps show depths on the bar varying but little from 7 feet. (Report of Lieutenant Gaillard.)

A comparative chart, showing the changes of shore-line and sailing-lines from 1791 to 1887, has been compiled from these maps and is forwarded herewith.

A study of these maps shows that since 1791 the peninsula (North Point) has been cut away, and that the high-water line has been pushed westward for distances varying from 350 to 1,000 feet, the maximum erosion being near the point. The point of the peninsula has been lengthened about 300 feet, and is pointed more directly toward the shore of Anastasia Island, opposite. The erosion of the sea-shore of Anastasia Island has been even more marked. The eroded portion varies in width from 850 feet near the north end to 2,750 feet at the

present location of Bird Island. This island, whose outer end extends but little beyond the old shore-line, forms a part of the shifting sands of the bar, and is at times joined to Anastasia Island, and again separated from it by a well-defined channel. Though the material composing the shoals at the mouth of Matanzas River bears evidence, in the large proportion of shell it contains, of having been cut from Anastasia Island, on which are deposits of coquina, both compacted and loose, the cross-sections of the inside channels have changed but little. The most important changes are in the channel opposite the city, south of Fort Marion (where the continuous 18 foot channel shown in 1826 is interrupted by a bar having a maximum depth in its shoalest portion of 13.9 feet), and in the channel west of the point of Anastasia Island. At this latter place is a bar with a maximum depth of 16 feet between the ends of two deeper channels. A portion of the shoaling opposite the city is undoubtedly caused by the silt and waste from the streets, carried into the harbor during rains, and to the sewage, which of late years is carried into this portion of the harbor in rapidly increasing quantities. The permanence of depth and contour in the other portions of the harbor, despite the large amount of material eroded from the vicinity of both sides of the entrance, shows that the tidal flow from the harbor is sufficiently strong to protect and maintain its channel against sand brought from the outside.

BAR.

The bar at the entrance to the harbor covers a fan-shaped area. North of Saint Augustine entrance, going south along the coast from St. John's River, the contour of the ocean 18-foot depths is parallel to the coast and about 500 yards distant from it. From a point opposite the shore, 1,700 yards north of the end of North Point, to a point nearly opposite the most easterly point of Bird Island, the contour follows closely the arc of a circle whose center is at the light-house on Aanastasia Island, 250 yards from the shore, and whose radius has a length of 2,580 yards. If to the area included between these lines is added the area of the triangle formed by the southern radius, a line drawn from the light-house tangent to the northeastern point of Anastasia Island and the 18-foot contour between them, the irregular figure thus formed will include the entire body of shifting sand forming the bar, and covering about 5 square miles. The angle at the light-house included between the boundary lines is 121 degrees. The area of this body of sand remains nearly constant, though its constituent elements must be continuously changing. The sand composing it is mainly silicious, though it contains some shell similar to that found on Anastasia Island. In his report on the survey of the harbor Lieutenant Gaillard states:

The bar is composed of fine, compact sand, interspersed in places with layers of coquina gravel. Digested in nitric acid, this sand lost 6 per cent. of its weight. A cubic foot, packed hard, weighed 118 pounds. When saturated with water it weighed 148 pounds. One grain in weight of this sand (taken at random) contains 2,050 grains. The average diameter of the grain is .005 inch.

During the progress of the survey it was frequently observed that although a very strong current might flow directly along a sand-bank but little effect would be produced upon it unless the current was aided by wave action. This was shown very plainly at the southern extremity of the peninsula. During flood-tide, on a still day, the current around this point would attain a velocity of over 3 feet per second at a point not 10 feet from the shore, yet the shore-line itself would not be changed appreciably. If, however, it became rough, and waves began to break against it, the shore would rapidly wear away, and this would continue even after the velocity of the current had fallen considerably below 3 feet per second. Other

things being equal, the greatest movement of sand invariably took place when wave action was the greatest.

The indications are that there is a more or less continuous movement of sand along the coast from north to south, and that the bar is of drift and wave formation. The surface of the bar is at an average mean low-water depth of about 4 feet. It is crossed by one or more channels, usually by a shallow swash channel near the north beach, and by a deeper channel, used by shipping, further to the south.

The records available, ranging from 1791 to 1887, show that there is always a deep channel close along the shore of Anastasia Island, due to the direction of the flow of the ebb tide as it leaves the point of north beach, extending to a point 1,000 yards beyond the light-house. From this channel the shifting channels across the bar form. Their position and direction vary over a sector of a circle whose center is the light-house and whose limiting radii, running northeast and southeast from the light-house, respectively, have an included angle of 80 degrees. The distances measured along the axes of the channels from the extremities of the inner 18 and 12 foot contours to the corresponding contours on the outer slope of the bar are about 1,400 yards and 600, respectively. The mean low-water depth on the crest of the bar between these contours varies from 5 to 9 feet.

The general direction of the channels across the outer bar is north 88 degrees east.

Map of—	Distances between corresponding inner and outer contours of channel across the bar measured along sailing line.		Direction of sailing line across bar and minimum channel depths.	
	18-foot contours.	12-foot contours.	Direction.	Depth.
	Yards.	*Yards.*		*Feet.*
1791			N. 77° E.	5
1826	1,400	1,100	N. 67° E.	7
1862	1,400	970	N. 80° E.	7
1882	1,000	275	N. 46° E.	9
1887	1,500	750	N. 40° E.	5.8

TIDES AND TIDAL FLOW.

The average range of tide at Saint Augustine, as determined by the U. S. Coast and Geodetic Survey, is 4.2 feet. Referring to Table VI et seq., of Lieutenant Gaillard's report, it is seen that from thirty days' observations at North Point the mean range was found to be 4.3 feet and the maximum range 6.04 feet. The average duration of the flood-tide was 6 hours and 11 minutes. During this time the water rose for 5 hours and 5 minutes, and fell for 1 hour and 6 minutes, reaching a point 0.55 foot below the maximum height before an ebb-flow was observed. During the ebb tides, whose mean duration was 6 hours and 1 minute, the water fell for 4 hours and 51 minutes, and rose for 1 hour and 10 minutes. When ebb-flow ceased the water was 0.34 foot above its lowest point. High-water level throughout the harbor is about the same. The measured difference of level between high water at the station in San Sebastian River and at the North Point is 0.01 foot.

In order to determine the average inflow and discharge for ebb and flood tides, a cross-section of the channel between North Point and Anastasia Island, at right angles to the direction of the flow, was carefully measured and divided into suitable parts by buoys. An "Ellis" current meter* was used for measuring the velocities.

*This meter was made by Buff & Berger, of Boston, and bore the makers' number, 20. It was rated in Prairie Slough, near Burlington, Iowa, by Assistant Engineer G. A. Marr, under the direction of Major Mackenzie, in October, 1879; again in Doctor's Lake, near Jacksonville, Fla., by Assistant Engineer J. W. Sackett, in November, 1886, and a third time by Lieut. D. D. Gaillard, in Saint Augustine Harbor, in July, 1887. The first two ratings were made in fresh water, the last in salt water. The computed values for a and b in the general equation $v = an + b$, with their probable errors, are as follows:

Date.	a	b	Probable error.
1879	+3.81420	+0.10810	0.00008
1886	+3.772	+0.091	0.00099
1887	+3.8254	+0.061	0.00332

Eight complete flood and eight complete ebb tides were observed, giving about three thousand observations in all, from which curves of velocities in a vertical plane were plotted, which are shown on Plates 1, 4, and 5. The velocity shown for any depth is the mean velocity for that depth during the entire tide. In the curves of time and velocity, shown on Plate VI, the velocity is the mean velocity of the entire vertical section at any given time. The velocities shown in figure 1, Plate V, are the mean velocities at different points of the cross-section for the entire tide. From these curves the mean velocity per second for each section was determined, and this velocity multiplied by the mean area of the section gave the amount of water passing through that section in one second. This result multiplied by the duration of the tide at section gave the total amount during one tide.

Velocity.—With but a single meter available it was impossible to determine accurately the mean velocity of the cross-section; and the following method was chosen as most likely to give a close approximation. It was assumed that for any given range of tide observations taken on different days at the various stations would, if the time of flow remained the same, give the same results as if all of the stations had been observed simultaneously. The mean range of the tide at the section being 4.3 feet, the velocity corresponding to this range was the desired velocity. Owing to the eddy during flood tide, more reliance was placed on ebb determinations, and an attempt was made by consulting the tidal almanac to take these observations when the range of tide would be about the same, using the intermediate time in flood-tide observations. That this attempt was partially successful will be seen by referring to Table II, included in this report.

When the range at any station differed from the mean range the observed velocity was reduced to that corresponding to the mean range by multiplying the mean change in velocity due to a change in range of 1 foot by the difference between the observed range and the mean range expressed in feet, and applying this correction with its proper sign to the observed velocity. The change in velocity due to a change in range of 1 foot could be determined approximately as two complete observations were taken at several stations. This method was but an approximation, but the observations were not numerous enough to show any law* connecting range and velocity, and this was the only method available under the circumstances. The mean velocity of any section during ebb tide was obtained from figure 1, Plate V.

The curve of mean velocity there shown was constructed from the curves showing the velocity in a vertical plane at each station. The mean velocity of a section during flood tide was determined by taking the mean of the reduced velocities of the adjacent stations.

Mean area.—As the time of slackwater differed considerably from that of high and low water it became necessary to determine the mean stages corresponding to ebb and flood tides of 4.3 range; the mean stage for each tide was obtained from the tidal

* In examining the curves of time and velocity it was found that the relation $V = v \frac{R^2 t}{v^2 T}$, in which V v are the velocities for corresponding ages of any two tides (as ½ tide, ¼ tide, etc.), R r the mean hydraulic radii of the cross sections for their mean flood stages, and T t the durations of the two tides, respectively, holds very closely for each of the two sets of flood tides taken at buoys 4 and 6 on different dates, and shown in figures 2 and 3, Plate V. There was not sufficient data at hand to show that this was more than a coincidence for the flood tides, nor was there sufficient to determine any similar relationship between different ebb tides. The mean velocities of flood determined from figure 2, Plate V, and reduced by this formula to the mean velocity for the mean time and range differed from each other by 0.02 feet.

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record and its height above low water of that day was taken as the numerator of a fraction of which the denominator was the range for the same tide. A mean of these results was taken, and this mean multiplied by 4.3 gave the mean stage of tide corresponding to 4.3 feet.

* * * * * * *

From an accurate drawing of the cross section the area of each section was computed for this mean stage. That no change in the cross section took place while gauging was ascertained by soundings. The area of each section is shown in Table II.

Duration of tide.—The duration of the tide at each station was determined by the current meter recorder as well as by special observations, and is given in Table II. which shows the discharge as computed both from ebb and flood tides. (Report of Lieut. D. D. Gaillard.)

The inflow and discharge computed in this manner are 1,331,640,499 cubic feet and 1,378,007,349 cubic feet, respectively.

The shape of the contours as well as the observations made show that there is no well-defined flood channel south of North Point, and that the channels across the bar are formed mainly by the ebb currents. This would naturally be the case, since the flood waters pass from a broad area into a narrow one and are not confined until the narrow area is reached, while the ebb waters flowing from a narrow channel retain their direction and velocity for some distance beyond the confining walls.

The mean velocity of the section opposite the Bird Island tide-gauge at ebb tide may be estimated quite closely from known data in the following manner: Observations show that at ebb tide the water passing between buoy 2 and Anastasia Island takes the Bird Island Channel. Assuming that 15 per cent. of this escapes before reaching the Bird Island section, we can ascertain the velocity of the rest by two methods. (1) Under the assumption that for the entire tide the velocities at the Bird Island section and the section between Buoy 2 and Anastasia, due allowance being made for the escape of 15 per cent. of the water, are inversely as the cross sections, a mean velocity of 1.86 feet per second and a maximum mean velocity of 2.68 feet per second are obtained. (2) By using the formula $V=C\sqrt{RS}$, in which R is known, as is also the actual difference in height of the water surface at the two sections during the period of maximum mean velocity, which is 0.4 feet. To this value a correction must be applied, namely, loss of head due to bends, which is obtained from Humphprey's and Abbott's formula. This correction is 0.033 foot. Giving to the C the value 95.4, the proper value for the channel under consideration as given in Jackson's Hydraulics, we obtain by this method the maximum mean velocity, equal to 3.48 foot-seconds.

When the velocity is at its maximum the amount of water flowing through all sections approximate parallel to the bar will be the same as that flowing through the Bird Island section, and the velocities will be inversely as the areas of the cross sections. These cross sections, three in number, are included between two lines symmetrically disposed with respect to the channel and making an angle of 65 degrees with each other. The sections are areas of circles, drawn from this point as a center, and are designed as B, C, D. Their distances from each other are shown in Table IV. Section C is on the crest of the outer bar.

TABLE IV.

Section.	R.	C.	Maximum mean velocity.	S.	Distance between.	Fall.
			Foot-seconds.			*Feet.*
Bird Island	17.8	99	2.58	.....	.....	.....
B	8.07	90	1.27	.000024	4,320	.104
C	11.3	92	0.66	.000005	1,750	.0087
D	28.5	104	0.18	.0000001	2,220	.0002
Total	.....	.....	.....	.....	8,290	.1129

NOTE.—The maximum mean velocity at Bird Island, used above, is the mean of the two results previously obtained.

This table shows that during uniform flow between the first and last sections a fall

of about 0.11 feet is necessary to overcome friction. The actual fall is obtained by subtracting from this result the head due to an acceleration of 2.4 feet per second (258—0.18), which is .09 feet, and leaves the total fall .0229 feet.

The inner ends prolonged intersect in the middle of the channel, about 300 feet in rear of the Bird Island section. (Report of Lieut. D. D. Gaillard.)

The total fall from the gauging section to Section D, which from the calculated slope must be at the level of the open ocean, is then (.229 feet + .4 feet) .423 feet, when the velocity at the gauging section is 2.02 feet per second. Should the flood currents be made to follow this same channel, the difference of level between Station 1 and the gauging section, corresponding to a mean maximum velocity of 2.02 feet per second at the latter section, may be obtained by adding to the head necessary to overcome friction and bends the head due to the acceleration received, viz, 1.84 feet per second (2.02—0.18). This difference of level would thus be 0.563 feet (0.1129 + 0.4 + .052).

Off shore currents.—It has not been possible with the means available to ascertain with certainty the directions of the currents outside the bar. The weight of evidence obtained by observation and inquiry at Saint Augustine is to the effect that there is a strong tendency for all currents to flow to the south. The direction of surface flow is modified by the winds, but the greatest velocities are always in a southerly direction. The broken nature of the 10-foot ocean contour line between Saint Augustine and Cape Carnaveral, as it appears on Sailing Chart B, U. S. Coast and Geodetic Survey, "Atlantic Coast, Cape Hatteras to Key West," would indicate disturbing forces in the locality named which are not found further north.

Winds and waves.—Through the courtesy of the surgeon in charge of the post hospital, Major Passmore Middleton, access was obtained to records giving the results of daily observations on the velocity and direction of the wind for 11 years. Observations were taken three times per day, and as no anemometer was available all velocities were estimated. The following will show the prevailing direction of the winds during the various months of the year. (See Table VII.)

Curves showing the relative direction and force of the wind for all points of the compass are shown in Figs. 1 and 2, Plate III. An inspection of these curves shows that the prevailing direction of the wind is from the southeast, while by far the strongest winds are from the northeast. The waves resulting from the latter cause the principal movement of sand along the coast. This was shown in a very marked manner on Sunday, June 12, 1887.

A heavy gale sprang up on Saturday night, which blew all day Sunday, with an estimated average velocity of about 35 miles per hour, causing a tremendous surf on the north beach and a strong current parallel to the beach, especially during flood tide. Under the action of the surf the beach was washed away for an average width of about 100 feet and a depth of 3 feet. This effect extended without diminution for a distance of 1½ miles up the beach (as far as observations could be taken). All this sand, 88,000 cubic yards (and probably much more), was brought by the littoral current produced by this wind directly under the influence of the ebb and flood tides of the harbor. With the exception of the change produced by this storm, there was but little alteration in the shore line during the progress of the survey. During the storm described above, waves were observed breaking in water as deep as 25 feet. The estimated height from hollow to crest of the greatest waves is 12 feet; their direction of travel is southwest. (Report of Lieut. D. D. Gaillard.)

STORM TIDES.

The highest tide of which there is any record occurred on August 24, 1885, when the water rose 7.3 feet above mean low water. It is said that the water has risen as high as 9 feet above mean low water. Tides rising 7 feet above mean low water may occur several times in a year, generally between the middle of August and first of November. On such occasions the length of the flood is increased about thirty-five minutes, and the water may not fall below 1 to 2 feet above mean low-water level for several days.

PROJECT FOR IMPROVING THE HARBOR.

Under the provisions of the act of March 2, 1829, Maj. P. H. Perrault, brevet lieutenant-colonel Topographical Engineers, made a survey of the harbor and submitted a project for the improvement of its entrance. Major Perrault suggested three methods for obtaining the result.

1. To concentrate the flow over the bar and to increase the depth on it by scour, by partially closing the present entrance by jetties.
2. To cut a canal across the North Point between Tolomato River and the sea.
3. To dredge a channel through the bar.

Major Perrault considered the first method feasible, but objected to it on the grounds that a new bar would probably form outside of the old one in a few years. The third method he also rejected on the ground that the bar shifts so rapidly that a dredged channel would not have any permanency. The second method he preferred. He proposed to cut a canal of the required width and depth through the point, to revet its sides with rock, to protect its ocean entrance by short piers, and to prevent a continuous flow through it by means of locks. The conditions of the problem to-day are the same as existed in 1830. Its solution is helped by the experience of the past half century.

Despite the improved methods and machinery, the extremely mobile nature of the sands composing the bar and its exposed position would make dredging operations unassisted by permanent works expensive and unavailing. The objections to the canal scheme proposed are the expense of building and securing permanent work on such an exposed site and on such an unstable foundation; the expense of maintenance; the almost certainty that the narrow entrance would silt up under the action of winds and waves; and finally the utterly unsatisfactory character of the entrance it would afford, one whose use would be difficult if not impossible in stormy weather.

There remains then the improvement by means of jetties. The danger mentioned by Major Perrault, of the advance of the shores outside the jetties and the formation of a new bar beyond their ends, exists.

In his project for improving the entrance to Cumberland Sound by means of jetties, General Gillmore says:

> What we know is that the agencies which formed and maintained the present bar will possess as much power and will have as favorable a field for action after the construction of the jetties as before, and that their construction supplies all the requisite conditions for the creation and maintenance of a new bar, having its crest nearly, if not quite, as far beyond the heads of the jetties as the latter are beyond the natural mouth of Cumberland Sound, between the points of the islands. I say nearly, if not quite, as far, because it seems probable that the new bar would present such a salient curve to the action of the littoral ebb and flood currents of the ocean, and of waves striking it obliquely, that its outer slope would be eroded and the materials carried above and below the outlet in a greater degree than the corresponding portion of the present bar is affected by the same causes. (Page 462, Rep. C. of E., 1876, Part I.)

On the other hand Mr. Vernon Harcourt says:

> In the case, however, of harbors on sandy coasts, the difficulties to be contended with are so impalpable, the results of works so uncertain, and the best designs so liable to be marred by unforeseen or unpreventable occurrences, that these harbors constitute the most difficult type of design with which a harbor engineer has to deal. * * * Various methods have been resorted to or proposed for constructing harbors on sandy coasts within recent times, namely: (1) Parallel jetties. * * * (2) Converging jetties. * * * (3) Closed harbors. * * * (4) Breakwater, connected with shore by an open viaduct. * * * (5) Detached breakwater. * * * The method of solid converging jetties has proved more uniformly successful than the parallel jetty system. It interferes less abruptly with the general line of coast; it

enlarges the capacity for tidal scour; it concentrates the scour at the entrance, and it affords area for shelter and dredging as well as for the passage of vessels. * * *

And finally, in summing up the chapter on "Harbors on Sandy Coasts," he says:

Solid converging jetties are superior, in many respects, to the narrow parallel jetty channels of the North Sea Coast, and appear to be the system best adapted for coping with the difficulties of such a position. (Harbors and Docks, pages 354, 355, 356, and 361.)

The most recent practice of engineers at home and abroad conforms to this judgment.

The improvement of the entrance by this system is recommended.

The limiting depth in the crossings in the harbor of Saint Augustine is from 15 to 17 feet, though the cross-sections of the channels, as far as the extremity of Bird Island, show that depths greater than this are maintained wherever the currents are confined to a single channel. As this mean low-water depth of 16 feet is the greatest available for all parts of the harbor, and as this depth can be maintained by the existing forces, when properly directed, it will be adopted as the maximum depth for the improved channel across the bar. In order to calculate the probable size and shape of the channel having a maximum depth of 16 feet, it becomes necessary to know the relations existing between the maximum depth, the mean depth, and the mean hydraulic radius in the various cross-sections of the natural channels of the harbor. These relations may be found from the following table. The comparisons are for the depths at mean low water.

Number.	Location of section.	Area.	Perimeter.	Perimeter width.	R.	Maximum depth.	Mean depth.	Mean maximum.	R. mean.	R. maximum.
1	Matanzas River, south of San Sebastian River	15,605	1,487	1.21	10.4	29.4	12.7	.431	.818	.354
2	Matanzas River, north of San Sebastian River	18,800	1,249	1.36	15.1	33.	22.8	.69	.662	.458
3	Matanzas River, near mouth of Maria Sanchez Creek	18,860	1,627	1.1	11.5	26.5	12.7	.479	.800	.433
4	Matanzas River, near Plaza	17,820	1,910	1.08	9.3	16.6	10.	.602	.931	.559
5	Ship channel, Marsh Island	5,840	610	1.60	9.6	21.0	15.4	.733	.623	.467
6	North River, near mouth	24,600	1,892	1.11	13.	23.9	14.5	.606	.895	543
7	Ship channel north of light-house	17,152	1,187	1.32	14.4	35.	19.	.542	.756	.411
8	Ship channel south of light-house	16,770	1,325	1.18	13.	30.	14.9	.496	.873	.433
9	Ship channel opposite Bird's Island	18,300	1,205	1.18	15.2	29.3	17.9	.610	.849	.518
	Means	.....	.....	1.24	.....	....	.....	.567	.821	.462

An inspection of the table shows that generally in the sections where $\frac{\text{mean}}{\text{max.}}$ is greatest, *i. e.*, where the depth is more evenly distributed across the section, $\frac{\text{R.}}{\text{max.}}$ is greatest. For safety the greatest value of $\frac{\text{R.}}{\text{max.}}$ (.559, sec. 4) will be adopted. For a maximum depth of 16 feet this will give a mean hydraulic radius of 9 feet.

The calculated ebb discharged at the gauging section is 1,331,640,499 cubic feet. This will be taken as a basis in the following calculations, the eddy at the gauging stations during flood-tides having impaired the accuracy of the calculations for flood discharge. Let it be assumed that the area included between the jetties outside the gauging section contains 40,000,000 square feet. A rise of tide of 4 feet would make a prism of 160,000,000 cubic feet. This must be added to the calculated discharge to obtain the amount of water passing between the ends of the jetties, giving 1,491,640,000 cubic feet. The average duration of the

ebb tide is 361 minutes (Table VI). The mean amount of water passing between the jetties per second will be 68,800 cubic feet. For this, with a mean velocity of 1.9 feet per second, as at Bird Island, a cross-section of 36,210 square feet would be required. Taking the ratio $\frac{R.}{mean}$ given for section 4 (0.931) we have for the mean depth 14.9 feet. The mean ebb stage is 1.41 feet above mean low water (Table I). An area of 36,210 square feet, with the depth at this stage would thus have a width of 2,200 feet $\left(\frac{36210}{14.9 + 1.41}\right)$. Assuming a width of 2,400 feet, the assumed discharge will require a mean velocity of 1.75 feet per second $\left(\frac{68800}{2400 \times 16.35}\right)$ (provided the jetties are built high enough to confine all the water, filling and emptying the tidal basin, to this single channel); while the mean velocity at the gauging section for the entire ebb is 1.49 per second $\left(\frac{1,331,640,499}{361 \times 60 \times 41238 \text{ (area)}}\right)$. This result is a mere approximation to the truth, but it will serve as a basis.

Having fixed the maximum width of entrance it becomes necessary to consider in what position it should be placed. An inspection of the charts shows that for a distance of 12,000 feet beyond the gauging section the ebb currents have sufficient living force and fall to maintain a continuous 18-foot channel. If the obstruction formed by Bird Island were moved north, the angular change in direction remaining the same, it is but fair to assume that the path through which the 18-foot channel is maintained would remain of equal length. At the point where this channel would be lost the strength of the current must be re-enforced, and this can be done by drawing all of the remaining waters passing from the tidal basin toward this same point, and there giving to the channel the approximate width calculated above—2,400 feet.

Beyond the section thus formed the jetties may be drawn still further together and their crests lowered, the exact height to be given them being determined experimentally. Starting with this assumption, the position and general direction of the south jetty may now be determined. As it is designed to act as a training-wall for the ebb currents its axis must be concave to the north. It must pass directly across the permanent deep channel north of Anastasia Island and must deflect the currents in their new direction without causing them too great a loss of head. It must, therefore, be so directed that the angle of incidence will be less than 36°. From the comparative chart it is seen that when the ship channels are furthest north their western ends start from opposite the light-house. The location of the jetty channel here possesses the advantages, (1) of starting the jetty from high ground already belonging to the United States; (2) of placing the jetty far enough away from North Point to avoid deflecting the water against it, with a consequent erosion; (3) of fixing the proposed channel in a range with the light-house. The outer end of the jetty should be extended to or near the present position of the 18-foot curve. The location C, D, E, F, G, H is therefore selected. The line M, E, F, G, H is somewhat shorter, but the location M E would cause a greater loss of head to the ebb currents. For the north jetty one point is fixed by the contracted channel required at K–G. The shore end should be so located as to be thoroughly protected against danger from the sea cutting around inside it. The line of direction between these two points should not make too sharp an angle with the coast line, so that littoral currents may be deflected properly. The outer ends should be prolonged if necessary to the 18-foot contour, and drawn as much as necessary toward the south jetty. The position I, K, L is recommended.

The height of the crest of the jetties should vary. At the shore ends the jetties should be high enough to prevent any movement of water along the coast across them, so as to prevent erosion in their vicinity. To this end their crests should be above the level of storm tides, .. the height of the beach will permit, but they should not be above the level of the beach in their rear. The crest of the in-shore end of the south jetty may be placed 8 feet above mean low water. That of the north jetty cannot be safely raised above 6 feet above mean low watere

Beyond the mean low-water line, and as far seaward as may be necessary, the jetties must have a height sufficient to catch and deflect all the ebb tidal prism; but to escape in part the heavy blows of storm waves, they should be no higher than is absolutely necessary.

The mean level at which ebb flow begins at North Point is 3.78 feet above mean low-water level. Sufficient height will be obtained by placing the jetty crests at a level of 4 feet above mean low-water level.

The outer ends of the jetties may be kept submerged below mean low water. Experience at the mouth of Saint John's River has shown that a submerged jetty acts as a very efficient guide to a current which has been turned parallel to it, and that the channel depth is maintained for some distance beyond the point where the submerged jetty ends. It is probable that it will be found that those portions of the jetties lying beyond the 2,400-foot section (K–G) may have their crests below mean low-water level. The height and length of these portions of the jetties must be fixed by experience as the work progresses.

The advantages attending the submerged jetties are their greatly decreased cost and the freer movement of the littoral currents across them.

That the jetties thus constructed will in no wise interfere with the complete filling of the tidal basin during flood-tide may be shown as follows: The width at the section K–G is 2,400 feet. The mean low-water mean depth is 14.9 feet. The mean flood stage is 2.84 feet above mean low water. The mean-flood mean depth will then be 14.9 + 2.84 or 17.74 feet. And the mean-flood area of cross section will be 42,576 square feet. The mean-flood area at the gauging section is 43,090 square feet, of which 9,666 square feet is taken up by an eddy, leaving an area of 33,324 square feet for the passage of flood water into the inner tidal basin. The eddy here is caused by the abrupt turn made by the flood waters around North Point, and will be eliminated by the improved channel. To the volume passing through the section K–G should be added the volume passing across the crests of the jetties when the water is between their level (3.78 feet above mean low water) and the highest stage (4.33 feet above mean low water). The area at K–G will be supplied by the waters passing between the extreme ends of the jetties and acro s the crest of the submerged parts.

If the opening between the extreme ends of the jetties (section L–H) is 1,600 feet, the level of the submerged crests beyond the section K–G may be calculated as follows: If we assume the velocity and time the same at K–G and L–H during ebb tide, the volumes of water passing through them will be to each other as the areas. The volume passing through K–G, assuming a velocity of 1.75 foot seconds during the ebb, is 1,524,000,000 cubic feet. The area at L–H is 26,096 square feet. (The mean depth at L–H is assumed the same as at K–G, as the construction of jetties would probably immediately push the 18-foot curve slightly seaward.)

The volume passing through L–H will be 1,016,000,000 cubic feet. The remaining water, plus the additional water of the tidal prism be-

tween the two sections, must pass across the submerged crest. One half may be assumed to cross each crest. Assuming the velocity of flow is 1.75 feet per second, as at K–G, this will require an area of 4,534 feet. The length of crest is 2,700 feet. Its depth below mean ebb stage will be $\frac{4534}{2700}$ or 2.42. The average depth of the crest below mean low water must be 1.0 foot.

The direction of the proposed channel at the crest of the bar is N. 72° E. As the heaviest gales are from the northeast or from the southeast, vessels entering the harbor during a storm would have the wind either abaft or abeam.

PROBABLE CHANGES DUE TO THE JETTIES.

It is impossible to foretell what will be the exact action of the forces which have produced the bar, under the changed conditions produced by the jetties, as recommended. In his project for improving the entrance to the harbor of Charleston, S. C., General Gillmore states three conditions which jetties must fulfill in order that a permanent improvement may be made. They are as follows:

(1) They should not impede the inflow to such a degree as to prevent the tidal basin being filled as now at every influx of the tidal wave.

(2) They should control the outflow to such a degree and in such manner that a channel of the required depth will be maintained through the bar.

(3) They should not to any considerable extent cause a movement seaward of the main body of the bar; that is, the general position of the bar should be independent of the effects produced between and beyond the heads of the jetties. (Report Corps of Engineers, 1878, Part I, pp. 559, 560.)

In the preceding discussion it has been shown, as far as possible, that the position and height recommended for the jetties will insure the fulfillment of the first and second conditions. As to the second condition, it may be added that though there never can be a great excess in volume of discharge over inflow at Saint Augustine, in the continued maintenance of the inner channels, despite the great amount of erosion immediately around the entrance, there is proof that the scouring power of the ebb tides exceeds that of the floods. This will follow from the force of the ebb currents being confined and directed by the shape of the entrance, while the flood currents do not gather power or direction until after the entrance has been passed, while it is at and outside the entrance of the channel that the scour is required. Even should the tidal currents be unable to scour a channel for themselves, they would have ample power to maintain a dredged channel, protected by the jetties. As to condition No. 3, it has been observed at the mouth of St. John's River, that after a heavy storm the beach had been eroded, the bar deepened, and its outer slope somewhat flattened. During a continued calm the beach and bar are built up again and the outer slope made steeper. Accurate observations have not extended over a period sufficiently great to show certainly that this is an invariable rule.

It is but natural that the channel on the bar should deepen under the action of the strong currents produced by the great storm tides, assisted as they are by the eroding power of the storm waves. Why the shoaling on the bar should take place during comparatively calm weather is not so clear, particularly where the ebb currents are made to follow a single channel under the influence of the jetties. The explanation may be as follows: Under the influence of a heavy northeast gale the direction of the wave motion turns from its normal direction perpendicular to the coast, and becomes oblique, parallel to the direc-

tion of the wind. The waves strike the coast obliquely, and the water thrown in motion by each wave carries its burden of sand eroded from the beach for some distance south along the beach before depositing it. When there are no obstructions this movement is continuous and does not appreciably change the position of the ocean contours. On arriving in the angle formed by the jetty, the movement of the sand is stopped, but little is carried across, and the greater part is deposited in the channels and on the shoals north of the jetty. After the storm is ceased the waves resume their normal direction. A portion of the deposited sand is pushed up on the beach and another portion is moved under the influence of the littoral tidal currents across the outer-bar slope. As the channel excavated by the storm waters is deeper than is needed for the lesser flow of the calm, this channel is filled to the depth which the existing flow will maintain.

Since the areas covered by the bars do not increase seaward with the lapse of time, as far as can be determined, the forces producing them must be in a state of equilibrium with the littoral forces which tend to maintain the general stability of position of the coast, and when the action of the abnormal storm forces ceases, the outer slope is carried back to its normal position, any sand added to it being in turn carried to the side, where it takes its place in the general movement beyond the obstruction.

If this is a true statement of the case, we may expect that the movement of sand will fill out the fore-shore outside the jetties until its line of direction bears a certain relation to the normal direction of the waves, to the storm direction of the waves, and to the littoral forces before mentioned.

When this condition has been attained, storms will probably build out and calms push back the fore-shore and its shoals without greatly changing the general position of the bar. From the salient angle formed by the jetties and the existing bar, there are good grounds for belief that this position of stability will not be far from the present limiting lines of the bar. The action of the fore-shore at Madras and Port Said, as described by Mr. Vernon Harcourt on pages 303 and 219, "Harbors and Docks," would seem to support this hypothesis.

CROSS-SECTION OF JETTIES AND MODE OF CONSTRUCTION.

In works on such an unstable foundation and where such large forces must be guided and controlled, great liberty of action must be allowed the engineer directly in charge in making changes in the shape and dimensions of the cross-section, in varying the materials forming it, in adapting the foundation to the varying conditions of the site, and above all, during construction, in exercising his judgment as to the points where work is most needed from time to time to produce the best immediate results.

The following general plan is recommended, subject to such changes as experience in the work itself may show expedient:

Shore protection.—To secure a firm connection with the beach and to prevent unnecessary extension of the jetties to fill erosion around their inshore ends, the shore protection should be built first from the storm high-water line out. They may be simple extensions of the jetties, having a similar cross-section resting on foundations of brush or shell, and furnished with curving wings to prevent erosion around them; or inside the mean low-water line they may consist of a pile dike (the piles strongly capped and braced) filled with stone and shell, with side walls

of stone, and also furnished with curved wing-walls as before. By using palmetto piles and creosoted timber the durability of the extension built in this latter method would be about as great as that of the stone dike. As the stone in the pile dike is confined by the timber capping, a heavy coping of stone would not be required.

Should it be necessary to protect the extremity of the North Point from erosion, this can be done by using low spur-jetties, consisting of a brush-mattress foundation covered and weighted with stone and shell.

Jetties.—The essential part of these must be a foundation extending well beyond the foot of the superstructure, to act as an apron to prevent scour, from overflow, or from currents parallel to the jetties, and a superstructure consisting of a hearting of shell or stone, side walls of stone, and a coping of heavy stone or concrete. The foundation should be of a character not liable to under-scour and flexible enough to follow closely the inequalities of the bottom without breaking. Brush mattresses are recommended. To avoid settlement after a channel has been formed along the jetties, as far as possible the foundation should not be laid in less than about 10 feet of water. This depth can generally be obtained by scour as the work progresses.

The superstructure of the jetties must be tight to prevent any considerable flow of water through it, and strong enough to resist the force of the waves. The tightness can be insured by a liberal use of oyster shells alone as a hearting, and mixed with the stones for chinking. The shell can be obtained in almost unlimited quantities on the east coast of Florida. It is sound and clean. It packs very closely, stands at a very steep slope, and, as far as is known, is not liable to deterioration. The side walls may be of any sound stone of suitable sizes and shapes. They should have a slope of at least 1 on 2 wherever acted on by the waves. The coping should be of heavy blocks, carefully and closely laid, and so arranged as to permit settling without fracture. A top width of 12 feet is considered sufficient for jetties under the exposure usual on the Atlantic coast of the United States. In the cross-section recommended an equivalent width is obtained by continuing the slope of 1 on 2 on the sea face to the crest, and by the inside face falling with a slope of 1 on 5 to a level 1 foot below mean low water, where the slope of 1 on 2 is regained.

MATANZAS INLET.

As an enlargement of this inlet might be followed by a diversion of a portion of the tidal prism belonging to the St. Augustine Inlet, with a consequent injury to that entrance, the Matanzas Inlet must be carefully observed from time to time. Should any tendency to enlargement become apparent, or should there be any appreciable deepening of the shoals at the divide, the bottom and sides of the inlet should be revetted by suitable works and the entrance closed as much as may be considered necessary. As the necessity for this is quite possible, an estimate for this work will be added to the estimate for the project.

ESTIMATE OF COST.

The following is the estimated cost of this work at current rates:

North Jetty:		
Shore extension, 500 linear feet, at $17.40	$8,700.00	
Coping, 14,132 cubic yards, at $6	84,792.00	
Riprap stone, 111,170 cubic yards, at $2.50	277,925.00	
Shell, 49,164 cubic yards, at $1.35	66,371.40	
Brush mattress, 124,033 square yards, at 70 cents	86,823.10	
		$524,611.05

South Jetty:		
Shore extension, 125 linear feet, at $17.40	$2,175.00	
Coping, 15,911 cubic yards, at $6	95,466.00	
Riprap stone, 164,474 cubic yards, at $2.50	411,185.00	
Shell, 90,991 cubic yards, at $1.35	122,837.85	
Brush mattress, 146,833 square yards, at 70 cents	102,783.10	
		$734,446.95
North Point shore protection:		
Brush mattress, 3,333 square yards, at 70 cents	2,333.10	
Riprap stone, 1,667 cubic yards, at $2.50	4,167.50	
		6,500.60
Matanzas Inlet:		
Brush mattress, 5,556 square yards, at 70 cents	3,889.20	
Riprap stone, 2,778 cubic yards, at $2.50	6,945.00	
		10,834.20
Total		1,276,393.25
Engineering and contingencies, 15 per cent		191,495.00
Total		1,467,888.25

If the total amount necessary could be made available at once, or at regular intervals, in such sums as would permit a continuous and vigorous prosecution of the work, this estimate could be greatly diminished.

COMMERCIAL STATISTICS.

Saint Augustine was founded in 1665, and during the Spanish possession was the capital of East Florida, and, as such, its most important city. After the cession to the United States the city had little or no growth for many years. Within the past few years it has greatly developed. It has been connected with the St. John's River and the interior by three lines of railway, one to Jacksonville, one to Tocoi, and one to Palatka, giving it good rail connection with all parts of Florida. New hotels and business houses have been erected, and large amounts of capital have been attracted to the city. From 1870 to 1880 the increase of assessed valuation of property was $79,845, while from 1880 to 1886 the valuation was $554,538. In December, 1886, the valuation was $1,369,588. This is far below the actual value, one of the hotels alone having cost that amount. The increase during 1887 has been even more marked. The principal business interests of Saint Augustine are at present her hotels and lumber mills. The hotels (not counting private boarding-houses or residences of winter visitors) have a capacity of 3,500 persons, and during the year 1885-1886 served 47,465 guests. The lumber business is yet in its infancy. There are two mills, with a total capacity of 16,166,000 feet per year. The forests from which the supply is drawn are easy of access, and have been but little cut into. Until lately the output of the mills has been entirely used at home. There are a number of stores doing a general mercantile business. Their development, as well as that of the lumber interests, has been obstructed by the lack of water transportation.

The freight receipts for the year ending June 30, 1887, are:

By water, 17,625 tons, valued at	$167,968
By rail, 23,798 tons, valued at	728,877

The receipts comprise general merchandise, food supplies, ice, brick, and building materials. The exports were lumber.

During the year 1886 three vessels were aground on the bar. One was a total wreck and the others sustained severe losses.

The known treacherous character of the bar makes it difficult to charter vessels for the Saint Augustine trade. The difference between

freight rates at Saint Augustine and rates to Fernandina and Jacksonville is very marked.

The Atlantic Coast Canal connects this harbor with the Halifax and Indian rivers. With the canal finished, and the harbor so improved as to permit safe and free passage of coasting steamers, this would be the natural line for the transportation of the large and increasing quantity of fruit and vegetables raised along those rivers. This, with the railroad connections with central and south Florida, via Palatka, the Jacksonville, Tampa and Key West and the Florida Southern railroads and their feeders, together with the safety of the port and its proximity to the ocean, will all tend to make Saint Augustine the natural and best point of export for northern markets for the fruit and vegetable trade.

For further details I would respectfully invite attention to the report of the Saint Augustine Board of Trade and to the letters from Mr. R. P. Armstrong and Messrs. W. Lyon & Co., forwarded with my report, dated January 5, 1887.

The following papers, maps, and plates accompany this report:

A.—PAPERS.

1.—Report of Lieut. D. D. Gaillard, Corps of Engineers.
2.—Commercial Statistics, Saint Augustine, Fla.

B.—MAPS.

	Scale.
1. Map Saint Augustine Harbor, Florida, 1887	$\frac{1}{5000}$
2. Map Saint Augustine Harbor, Florida, 1791	$\frac{1}{50000}$
3. Map Saint Augustine Harbor, Florida, 1826	$\frac{1}{50000}$
4. Map Saint Augustine Harbor, Florida, 1862	$\frac{1}{50000}$
5. Map Saint Augustine Harbor, Florida, 1882	$\frac{1}{50000}$
6. Map Saint Augustine Harbor, Florida, 1887	$\frac{1}{50000}$
7. Comparative chart of shore and sailing lines	$\frac{1}{50000}$
8. Plan and cross-section of proposed jetties	$\frac{1}{5000}$
9. Map of Matanzas Inlet	$\frac{1}{5000}$

C.—PLATES.

1. Tidal curves.
2. Cross-section of channel at entrance to harbor.
3. (3 figs.)—Relative direction and velocity of wind for eleven years, Figs. 1 and 2; and right line given by equation for rating current meter, Fig. 3.
4. Mean velocities for ebb and flood tides.
5. (7 figs.)—Fig. 1, comparative velocities in cross-section, showing velocity at 1 foot from bottom, 1 foot from surface, and mean velocity; Figs. 2 and 3, velocities during entire flood tides at buoys 4 and 6; Fig. 4, velocity and tide, ebb and flood, at buoy 6; Figs. 5, 6, and 7, tidal curves.
6. Mean velocities during entire tides.
7. (3 figs.)—Method of using and rating current meter.
8. Diagram of borings.

Respectfully submitted

W. M. BLACK,
Captain of Engineers.

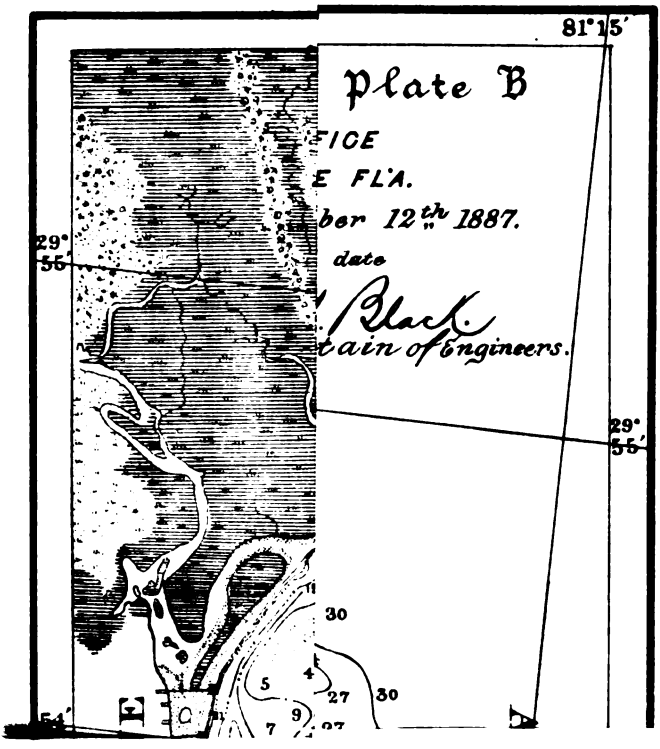
REPORT OF LIEUT. D. D. GAILLARD, CORPS OF ENGINEERS.

JACKSONVILLE, FLA., *November* 12, 1887.

SIR: I have the honor to submit the following report of the survey of Saint Augustine Harbor, Fla.:

The work contemplated consisted in:

1. Location of shore-lines.
2. A series of soundings covering the entire bar and harbor.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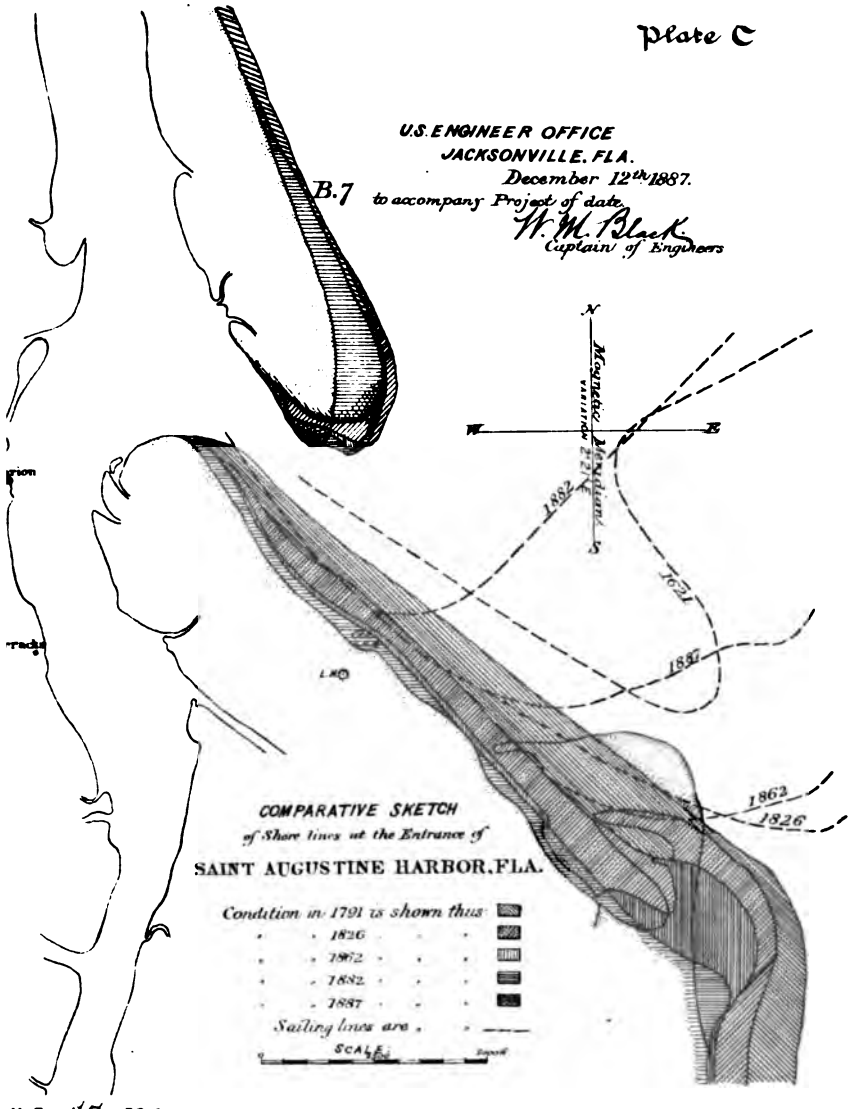

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3. Borings to determine the character of the bottom and principal shoals.
4. Gauging the channel at a suitable place.
5. Determining the current velocities in the main channels.
6. Tidal observations showing duration and range of tide at suitable points in the harbor and the slope of the water surface between them.
7. Compilation of all local data, giving force and direction of winds.

Preparations having been completed, I left Jacksonville for Saint Augustine on May 23, 1887, and on the following day organized the party, which, during continuance of the topographical work, consisted of myself, Messrs. F. W. Bruce and J. H. Bacon, assistant engineers; Capt. Edward Allen in charge of whale-boat, one recorder, one tide-gauge keeper, and four boatmen.

When hydrographic work commenced, the party was further increased as occasion demanded by one recorder, two boatmen, one leadsman, and two tide-gauge keepers.

DESCRIPTION.

Saint Augustine Harbor is formed by the junction of Matanzas and Tolomato (or North) rivers, salt-water estuaries which run parallel to the coast, and about 1 mile distant from it. They unite at Saint Augustine in a single channel opening into the sea. The Matanzas River breaks through the coast at its southern end also. The total length of North River is about 22 miles, and of the portion of Matanzas River, which is filled from the Saint Augustine inlet, about 12 miles.

In the rear of the city, and emptying into the Matanzas River, about 3 miles from its mouth, is the San Sebastian River, another tidal stream.

These rivers, for several miles from the mouth, vary in depth from 12 to 30 feet, and in width from 100 to 800 yards, and form a tidal basin of about 23 square miles. The tidal range at Saint Augustine varies from about 3 to 7 feet, with a mean range of 4.2 feet.

In front of the city, and separated from it by the Matanzas River, is Anastasia Island, a low, sand-covered island, about 15 miles long, and with an average width of about 1 mile. Separating North River from the ocean is a sandy peninsula about 20 miles long and with an average width of about 1½ miles. Between the southern extremity of this peninsula and the northern extremity of Anastasia Island is the entrance to the harbor, and, as is the case with all Southern harbors, this entrance is obstructed by a bar.

TRIANGULATION.

Base line.—The base line used was 10,330.4 feet long, as obtained from the Coast Survey records, and subsequently verified by careful measurement of a check base.

Triangulation stations.—Triangulation stations were chosen at suitable points, and signals so erected that the instrument could be set up exactly under the target.

Measuring angles.—The instruments used in the triangulation were transits reading to one minute, and the method of measuring angles was that pursued on the "Lake Survey."

The instrument having been put in as perfect adjustment as possible, a station was selected as a starting point, and a pointing to it made, and then the other stations were pointed at in succession, closing on the first station, the telescope being erect and moved in the direction of positive graduation. Another, pointing to the first station, was then made, and the other stations pointed at in succession, closing on the first station, the telescope being still erect, but moved in the direction of negative graduation.

The telescope was then reversed and the same thing repeated. The results thus obtained constituted "one set," and a mean of these results constituted a "combined result." Six combined results were taken at each station, and after each (as both venires were read) the horizontal limb was shifted 30° in azimuth.

By this method instrumental errors are corrected, and a mean of all combined results for each angle is taken as its proper value. These angles were then adjusted by the method of "least squares," and the adjusted values adopted as the true ones.

LOCATION OF SHORE LINES.

All shore lines were located by stadia measurement, when the nature of the ground permitted. Frequent tests were made to determine if any change had taken place in the stadia wires, and angles were taken with the transit at frequent intervals upon three or more known objects as a check upon the work. In all 26.6 miles of shore line were located, 21.2 miles by stadia measurement, and 5.4 miles partly by sextant and partly by "intersections."

SOUNDINGS.

Soundings in the breakers were all taken from a whale-boat, which carried sail or was pulled by oars, depending on the direction of the wind and the violence of the breakers. All other soundings were taken from a steam-launch of about 3 feet draught.

Outside lines of soundings are in general parallel to each other and perpendicular to the shore lines and were established by front and back ranges. The back ranges used were the central tower of the San Marco Hotel, and the Saint Augustine light-house, both of which were admirably adapted to our purpose. Front ranges were marked by means of three flags, different in color, fastened to a pole which was carried by one man, the spot at which it was to be set up having previously been designated.

Inside lines of soundings were run at right-angles to the channel, and established by using suitable natural objects as back ranges and the same front ranges previously described. Soundings were taken with the ordinary sounding line (which was compared with a standard at frequent intervals) and were located by means of two transits. A flag was dropped on the sounding boat at the end of every minute, and as it fell the transit man noted the angle. As a check every fifth flag was red, the four preceding ones having been white. Intermediate soundings were distributed between these located positions.

The lines of soundings aggregated about 107 miles, the average distance apart of lines was about 500 feet, and of soundings on these lines about 100 feet.

BORINGS.

Owing to the violence of the breakers and the small depth available at many of the points where borings were desired, the ordinary boring apparatus was useless, and special apparatus suitable to the work in hand had to be procured. At your suggestion, the use of the water jet was chosen as the method most likely to succeed. No details directly applicable to the case in hand could be obtained, and it became necessary to obtain by experiment the desired information. As a result of these experiments, the following apparatus was chosen and used during the entire work:

Pump.—The pump was a No. 1 rotary pump made by "The Gould Manufacturing Company," Seneca Falls, N. Y., with wire-bound rubber suction hose 10 feet long and 1½ inches interior diameter. The discharge hose was 25 feet long and 1 inch in diameter, and was made of triple-ply rubber. Turned by one man at a rate of 130 revolutions per minute, which was the ordinary speed while boring, the discharge with a lift of 4 feet was 9.15 gallons per minute.

Piping.—Galvanized iron pipes, 2 inches in diameter and in lengths of 5 feet, was used in connection with wrought-iron pipe 1 inch in diameter and in lengths of 12 feet and 5 feet. A reducer was used to enable the discharge hose to be used with either size at will.

Method of using.—The pump was mounted on a light frame placed across the bow of a whale-boat. The hose was coupled to a 2-inch pipe of length sufficient to project about 10 feet above water with one end resting on the bottom. This pipe was held in a vertical position by one man standing in the boat, which was securely anchored, and allowed to swing under the combined influence of wind and tide before borings commenced. The pump was then turned by one man, standing in the bow, and the pipe was sunk a few inches below water-level. The hose was then uncoupled and attached to a 17-foot length of a smaller pipe which was inserted into the pipe previously sunk, and was itself sunk below the water-level. Additional lengths of 5 feet were fastened in succession to the smaller pipe whenever it was possible to sink it deeper than 16 or 17 feet, which could rarely be done in the quicksand composing the bar. Specimens could be procured at any stage of the work:

1. By uncoupling the hose and letting a lead armed with tallow down into the pipe; or,
2. By inserting the suction hose in the pipe and giving a few turns to the pump, being careful to stop and empty the hose before the materials sucked up got into the pump itself; or,
3. After the 1-inch pipe was inserted, by holding a small vessel at the top of the 2-inch pipe to catch the materials coming out.

With all these methods stopping the pump caused the sand to pack around the pipe very rapidly, and further progress was made much more difficult. Raising and lowering the pipe slightly while sinking it rendered it easy to ascertain when a different stratum was reached, and thus prevented unnecessary stopping to obtain specimens of boring.

The pipe could be raised in all cases by the united strength of from two to four men, or by two men using an oar as a lever. Attempting to raise the smaller pipe invariably brought up the larger one also, the two being solidly united by fine sand forced upward by the

stream through the smaller pipe. Seventeen borings in all were obtained, varying in depth from 4½ to 24 feet, and specimens of the strata through which the pipe passed were preserved, and are fully described in Plate VIII.

Time consumed in making borings.—To sink the pipe to a depth of 24 feet in sand slightly mixed with mud took about 27 minutes, about 15 minutes in actual pumping and 12 minutes in coupling, and required 10 feet of 2-inch pipe and 27 feet of 1-inch pipe; to a depth of 16 feet in pure sand took about 15 minutes, 8 minutes in pumping and 7 minutes in coupling, and required 10 feet of 2-inch pipe and 17 feet of 1-inch pipe; to a depth of 12 feet in pure sand took about 3 minutes of pumping, and required one 12-foot length of 1-inch pipe.

Remarks.—During these borings experience showed that within certain limits quantity of water was of more value than pressure. As long as the pump could supply more water than could be absorbed by the sand around the pipe, the latter would continue to sink. But as soon as the upward flow around the pipe stopped, the sand would pack around it and its further progress would cease. The use of the two sizes of pipe greatly facilitated this upward flow and helped to prevent packing. About 12 feet was the limit to which it was possible to sink a pipe of uniform size. By raising the pipe and forcing it down smartly with the hand while pumping it was possible to penetrate layers of mud 2 or 3 feet thick and of coquina gravel 2 feet thick. The pump used was deficient in capacity, but was the best that could be procured in Jacksonville at the time. The entire cost of the pump, pipes, hose, and frame was about $45.

The bar is composed of fine, compact sand, interspersed in places with layers of coquina gravel. Digested in nitric acid this sand lost 6 per cent. of its weight. A cubic foot packed hard weighed 118 pounds. When saturated with water it weighed 148 pounds. A quantity weighing 1 grain (taken at random) contained 2,050 grains. The average diameter of the grains was .005 inch. During the progress of the survey it was frequently observed that although a very strong current might flow directly along a sand bank but little effect would be produced upon it unless the current was aided by wave action. This was shown very plainly at the southern extremity of the peninsula. During flood tide on a still day the current around this point would attain a velocity of over 3 feet per second at a point not 10 feet from the shore, yet the shore-line itself would not change appreciably. If, however, it became rough, and waves began to break against it, the shore would rapidly wear away, and this would continue even after the velocity of the current had fallen considerably below 3 feet per second. Other things being equal, the greatest movement of sand invariably took place when wave action was the greatest.

GAUGING THE CHANNEL.

In order to find a suitable section for gauging, a straight reach of channel was selected and trial lines of soundings run. By means of floats a section at right angles to the direction of the current was found, and on each bank of the channel permanent signals were erected in the plane of this section. Stations on the sections were marked by buoys, which were numbered in regular order from 1 to 6, No. 1 being nearest the peninsula shore. During flood tide an eddy was formed next this shore, the direction of its current being parallel to the shore.

Buoy No. 1 was located in the middle of the eddy. Buoy No. 2 was placed to mark the outer boundary of the eddy. The location of buoys Nos. 3, 4, 5, and 6 was determined by the inequalities of the bottom. The area to be gauged was thus divided into seven sections, numbered in regular order, beginning at the peninsula shore. Current observations were taken at each buoy with an Ellis metre. In using the current meter, a Whitehall boat was anchored by three anchors, one of 100 pounds and two of 50 pounds each. One line led forward and one from each side. The bow of the boat was towards the waves. By means of a clamp-screw the meter was fastened to a 3-foot length of one-half inch gas-pipe, so as to be within 1 foot of the bottom when at its lowest position. The lower end of the gas-pipe was loaded with 10 pounds of lead, while to the upper end was fastened a graduated line.

A three-eighths-inch tarred manilla rope, fastened to a 125-pound mushroom anchor, was run through the gas-pipe and brought into the boat. To counteract the effect of the waves a frame was constructed, to one end of which this rope was fastened.

In plan the frame was trapezoidal; the bases were 3 and 4 feet, respectively, and the sides were about 9 feet. A cross piece, parallel to the bases, rested in the row-locks of the boat when the frame was in position. To the forward part of the frame was attached a counterpoise, weighing about 75 pounds, and to the afterpart was fastened the meter cable. The method of construction and the manner of using are shown in Plate 7, figures 1 and 2.

This arrangement enabled observations to be taken when the boat rose and fell as much as 3 feet. At each station occupied observations were begun at slack water and continued to the next succeeding slack water. The method of taking observations was as follows:

The meter was lowered to the bottom and the reading of the register noted. At the end of 3 minutes the register was read, the meter was raised 3 feet, and the same operation was repeated until a distance of 1 foot from the surface was reached, when the meter was again lowered to the bottom.

To avoid unnecessary delay in raising the meter the observer called "Ready" about 10 seconds before the expiration of the 3 minutes, and the boatman made the necessary preparations. At the instant of reading the observer called "Time," and the meter was raised to its new position. As the meter was in motion during the process of raising, an excess of 3 feet, due to this cause, was indicated by the register at every reading. This excess, being constant, was easily eliminated from the final results. By means of a delicate spring-balance the pressure of the contact spring upon the propellar axis was kept constant and as small as possible. The method of regulating this pressure was that adopted by Major MacKenzie on the Mississippi in 1879. The constants of the meter were determined before current observations ceased. The method employed in rating the meter was as follows:

Rating current meter.—The meter was an "Ellis meter," made by Buff & Berger, and bearing the makers' number, 20. No still water accessible to steam-launch could be obtained near Saint Augustine, so a place was selected in the ebb channel near the tide-gauge on North Point, a course was marked by ranges, and a base-line 1,000 feet long was carefully measured with a steel tape parallel to this course.

We proceeded to this place on July 16, 1887, the party consisting of myself, two assistants, a recorder, and two men to maneuver the current-meter frame. A transit was set up at each end of the base and an angle of 90° turned off from the base-line towards the course. The meter was suspended from the bow of a steam-launch, on a frame constructed in the following manner: In the center of the current-meter frame, previously described, was fastened an arm of timber suitably braced, which projected about 10 feet in front of the launch. At a point about 6 feet from the bow of the launch a vertical piece of gas-pipe was hinged to this arm and supported near the meter by a diagonal brace permanently attached to the frame. To the lower part of the gas-pipe three lines were fastened, one of which led over a pulley at the end of the projecting arm and the others to the starboard and port sides of the bow. By means of the first-mentioned line the meter could be raised entirely out of the water when the other lines were slackened. When in use, the meter, clamped to the gas-pipe, was about 6 feet ahead of the launch and about 3 feet below the surface of the water.

The gas-pipe was held rigidly against a socket in the diagonal brace by tightening the bow lines. The method of attaching the meter while rating is shown in Plate 7, figure 3.

An observer was stationed at each transit, and one with a time-piece on the launch; the meter register was read by myself. When the observers, the engineer, and helmsman were all in readiness, the launch approached one end of the course, getting carefully on the range. When within about 50 feet of the beginning of the course, the observer at the transit gave a signal and the time-keeper and myself took up the beats of our respective instruments. At the instant the pipe on which the meter was suspended passed the cross-wire of the telescope the transit observer dropped a flag, and as it was falling an observer on board called "tick," sharply and distinctly. The time and register reading were noted. The same method was pursued at the other end of the base-line.

The velocity of the launch varied from 2.6 to 10.1 feet per second. No lower speed could be adopted on account of the difficulty in steering. The day selected for the rating was nearly calm and the water quite smooth. As slackwater lasted but a few minutes, the runs were equally distributed in point of time with respect to it, in order to equalize any effect of currents. Fourteen runs were made in all—6 before the tide turned, 2 during slack, and 6 after turn of tide. To eliminate the effect of currents these runs were combined as follows: Runs 1 and 2, 2 and 3, 3 and 4, etc., giving 13 results, one of which was rejected by Pierce's Criterion. These results were platted with reference to a system of rectangular co-ordinates, the velocity in feet per second, V, being the abscissa, and the number of revolutions per second (n) the ordinate. The line showing the relation between them is practically a right line, whose equation is $V=an+b$, in which a is the tangent of the angle which the line makes with the axis of abscissas, and b the intercept on the axis of ordinates. Substituting the observed values of V and N in this equation, 12 observation equations were obtained, and combining each one of these with all the others, 66 values each for a and b were obtained. Applying "least squares" to these results, the value of a was found to be 3.8254 (with a probable error of 0.00332), and that of b, 0.061. The size of the probable error in the value of a was undoubtedly due to the unfavorable locality available for the rating and to the presence of varying currents impossible to avoid, which, in spite of efforts to eliminate them, must have entered the final result.

Eight complete flood and 8 complete ebb tides were observed, giving about three thousand observations in all, from which curves of velocities in a vertical plane were plotted.

which are shown on plates 1, 4, and 5. The velocity shown for any depth is the mean velocity for that depth during the entire tide. In the curves of time and velocity, shown on Plate VI, the velocity is the mean velocity of the entire vertical section at any given time. The velocity shown in figure 1, Plate V, are the mean velocities at different points of the cross-section for the entire tide. From these curves the mean velocity per second for each section was determined, and this velocity multiplied by the mean area of the section gave the amount of water passing during one tide.

Velocity.—With but a single meter available it was impossible to determine accurately the mean velocity of the cross-section; and the following method was chosen as most likely to give a close approximation. It was assumed that for any given range of tide observations taken on different days at the various stations, would, if the time of flow remained the same, give the same results as if all the stations had been observed simultaneously. The mean range of tide at the section being 4.3 feet, the velocity corresponding to this range was the desired velocity. Owing to the eddy during flood-tide, most reliance was placed on ebb determinations, and an attempt was made, by consulting the tidal almanac, to take these observations when the range of tide would be about the same, using the intermediate time in flood-tide observations. That this attempt was partially successful will be seen by referring to Table II, included in this report.

When the range at any station differed from the mean range, the observed velocity was reduced to that corresponding to the mean range, by multiplying the mean change in velocity due to a change in range of 1 foot, by the difference between the observed range and the mean range expressed in feet, and applying this correction, with its proper sign, to the observed velocity. The change in velocity due to a change in range of 1 foot could be determined approximately, as two complete observations were taken at several stations. This method was but an approximation; but the observations were not numerous enough to show any law connecting range and velocity, and this was the only method available under the circumstances. The mean velocity of any section during ebb tide was obtained from fig. 1, plate V. The curve of mean velocity there shown was constructed from the curves showing the velocity in a vertical plane at each station. The mean velocity of a section during flood tide was determined by taking the mean of the reduced velocities of the adjacent stations.

Mean area.—As the time of slackwater differed considerably from that of high and low water, it became necessary to determine the mean stage corresponding to ebb and flood tide of 4.3 range. The mean stage for each tide was obtained from the tidal record, and its height above low water of that day was taken as the numerator of a fraction of which the denominator was the range for the same tide. A mean of these results was taken, and this mean multiplied by 4.3 gave the mean stage of tide corresponding to 4.3 feet.

From an accurate drawing of the cross-section, the mean area of each section was computed. That no change in the cross-section took place while gauging, was ascertained by soundings. The area of each section is shown in Table II.

Duration of tide.—The duration of the tide at each station was determined by the current meter recorder, as well as by special observations, and is given in Table II, which shows the discharge as computed both from the ebb and flood tides. The tidal basin as computed from the Coast Survey maps is 34.47 square miles.

CURRENT VELOCITIES IN MAIN CHANNEL.

Observations were taken with the current meter at three points in the main channel, namely, opposite Marsh Island, at the gauging section, and opposite the Bird Island tide-gauge. The results obtained at the gauging section are given in Tables I and II, and the others are in the following table. (See Table III.)

But a single station was occupied at each of these places, and this was located in mid channel; consequently observed velocities are much greater than the mean velocities of the respective sections.

These observations have all been plotted and are shown in plates Nos. 4 and 6.

The mean velocity of the section opposite the Bird Island tide-gauge at ebb tide may be estimated quite closely from known data, in the following manner:

Observations showed that at ebb tide the water passing between Buoy 2 and Anastasia Island takes the Bird Island Channel. Assuming that 15 per cent. of this escapes before reaching the Bird Island section, we can ascertain the velocity of the rest by two methods: (1) Under the assumption that for the entire tide the velocities at the Bird Island section and the section between Buoy 2 and Anastasia, due allowance being made for the escape of 15 per cent. of the water, are inversely as the cross-sections, a mean velocity of 1.86 feet per second and a maximum mean velocity of 2.68 feet per second are obtained. (2) By using the formula $V=C\sqrt{RS}$, in which R is known, as is also the actual difference in height of the water surface at the two sections during the period of maximum

mean velocity, which is 0.4 foot. To this value a correction must be applied, namely, loss of head due to bends; which is obtained from Humphrey's and Abbott's formula. This correction is −0.033 foot. Giving to C. the value 95.4, the proper value for the channel under consideration as given in Jackson's Hydraulics, we obtain the maximum mean velocity equal to 2.48 feet per second.

When the velocity is at its maximum the amount of water flowing through all sections approximate parallel to the bar will be the same as that flowing through the Bird Island section, and the velocities will be inversely as the areas of the cross-sections. These cross-sections, three in number, are included between two lines, symetrically disposed with respect to the channel, and making an angle of 65° with each other. The inner ends prolonged intersect in the middle of the channel about 300 feet in the rear of the Bird Island section. The sections are arcs of circles, drawn from this point as a center and are designated as B, C, D. Their distances from each other are shown in Table IV. Section C is on the crest of the outer bar.

This table shows that during uniform flow between the first and last sections a fall of about 0.11 foot is necessary to overcome friction. The actual fall is obtained by subtracting from this result the head due to an acceleration of 2.4 feet per second, which is 0.09 foot, and leaves the total fall 0.0229 foot. The actual fall between North Point and Bird Island section has already been given.

Remarks.—The ratios of the maximum to the mean velocity at the stations on the gauging section are shown in the following table:

TABLE V.—*Ebb tide.*

Buoy.	Mean velocity.	Maximum velocity.	Ratios of maximum to mean velocity.
1	2.14	2.83	1.32
1	2.27	3.03	1.33
2	1.47	2.56	1.74
3	1.57	2.51	1.60
4	1.40	2.05	1.46
5	1.52	2.04	1.34
6	1.53	2.03	1.33
6	1.63	2.48	1.52
Mean			1.455

The ratio of the mid depth to the mean velocity for ten complete ebb and 10 complete flood tides, taken at ten different stations, was as follows:

$$\text{Flood} = \frac{V\,m}{V\,\frac{1}{2}\,d} = .9384.$$

$$\text{Ebb} = \frac{V\,m}{V\,\frac{1}{2}\,d} \quad .9485.$$

$$\text{Mean} = .9434.$$

TIDAL OBSERVATIONS.

A box tide-gauge was established at North Point and read during the entire survey. Ordinary gauges, reading to tenths of feet, were established at the following points: at Bird Island, in the position shown on the map; 1½ miles up North River, on Gardner's Wharf; on the causeway bridge across the Sebastian River (directly in rear of the town); at the "divide" in the Matanzas River, 12 miles below Saint Augustine, and at Matanzas Inlet, on Allen's Wharf. These gauges were all read every fifteen minutes for twelve hours per day. The time-pieces of all tidal observers were compared with the same standard, and the uniformity in rate of this standard was determined by sextant observations for "time by single altitudes."

Double lines of level were run connecting the tide-gauges at North Point, Bird Island, Gardner's, Corbett's Wharf, and Sebastian River, with the Coast Survey bench-mark on the sea-wall near the basin; and bench-marks were established at Gardner's, North Point, and Sebastian River. Care was taken in all leveling to make the foresights and backsights equal, and all lines were run early in the morning, experience having shown that the refraction produced by the intense heat later in the day rendered results obtained then of little value.

Flood tides at Saint Augustine came in from the northeast while ebb tides are discharged to the southeast.

Simultaneous tidal curves for North Point, Corbett's Wharf, Sebastian River, and Matanzas Divide have been plotted, and are shown in Plate I. The common datum plane to which they are referred is the mean low water of each for the period under consideration. Other tidal curves at North Point are shown in figures 4–7, Plate V.

WINDS.

Through the courtesy of the surgeon in charge of the post hospital, Maj. Passmore Middleton, access was obtained to records giving the result of daily observations on the velocity and direction of the wind for eleven years. Observations were taken three times per day, and as no anemometer was available, all velocities were estimated.

The following table shows the prevailing direction of winds during the various months of the year. (See Table VII.)

Curves showing the relative direction and force of the wind, for all points of the compass, are shown in figures 1 and 2, Plate 3.

An inspection of these curves shows that the prevailing direction of the wind is from the southeast, while by far the strongest winds are from the northeast. The waves resulting from the latter cause the principal movement of sand along the coast. This was shown in a very marked manner on Sunday, June 12, 1887. A heavy gale sprang up on Saturday night, which blew all day Sunday with an estimated average velocity of about 35 miles per hour, causing a tremendous surf on the north beach, and a strong current parallel to the beach, especially during flood tide. Under the action of the surf the beach was washed away for an average width of about 100 feet and depth of 3 feet. This effect extended without diminution for a distance of 1½ miles up the beach (as far as observations could be taken). All this sand, 88,000 cubic yards (and probably much more), was brought by the littoral current produced by this wind directly under the influence of the ebb and flood tides of the harbor. With the exception of the change produced by this storm, there was but little alteration in the shore-line during the progress of the survey. During the storm described above waves were observed breaking in water as deep as 25 feet. The estimated height, from hollow to crest, of the greatest waves is 12 feet; their direction of travel is southwest.

PAST CONDITION AND CHANGES.

A fac-simile of a map of Saint Augustine Harbor, showing the assault by Francis Drake in May, 1586, was the oldest obtainable map. The shore-lines are of little value; but the map is useful as showing that at that time the channel ran close along Anastasia Island. No depths are given. The next map is a fac-simile of one made by "Herman Moll," of London, the exact date of which I am unable to ascertain; but it was probably made some time in the seventeenth century. This map gives the shore-lines very roughly, but shows the channel nearly in its present position, and gives 12 feet as the depth across the bar. A comparison with present depth at other places makes it probable that this depth is referred to high water.

A fac-simile of a map by "Thos. Silver," showing Governor Oglethorpe's siege of the town in 1740, shows the channel nearly in the same position as in 1882, and gives 9 feet as the depth on the bar.

All the preceding maps show the northern shore of Anastasia Island as running nearly east and west and extending much farther eastward than the peninsula. Some allowance must be made for inaccuracy, as they differ considerably in other respects.

Since 1740 maps of Saint Augustine Harbor have been made in the following years: 1791 by the Spanish engineers 1826 by Lieutenants Serles, Huger, and Brisbane, Fourth Artillery, under the direction of Lieutenant-Colonel Perrault, of the Topographical Engineers; 1829 by Lieut. Jefferson Vail, First Infantry, under direction of Lieutenant Colonel Perrault; 1862 and 1882 by United States Coast Survey.

These six maps show depths on the bar varying but little from 7 feet.

A comparative chart showing the changes in the shore-lines and sailing-lines has been prepared from surveys made in 1791, 1826, 1862, 1882, and 1887, and is forwarded with this report. This chart shows continual wearing away both of the north and south beaches. The wear of the north beach is doubtless due to storms, while that of the south beach, north of Bird Island, is largely due to the ebb tide flowing against it.

MATANZAS INLET.

In accordance with instructions received from you during the progress of the survey at Saint Augustine, the entire party proceeded to Matanzas Inlet on the 25th of July

1887, arriving there about 11 o'clock a. m. On the same day a tide-gauge was established at Allen's Wharf; a base line of 1,000 feet was measured with a steel tape; 2.1 miles of shore-lines were located by stadia measurement; a section across the inlet was sounded and permanently marked, and current-meter observations taken during ebb tide. On the following day current observations were continued. These observations have been plotted in the same manner as those previously described, and are shown in Plates Nos. 4 and 6.

The mean ebb area of the section sounded is 7,070 square feet.

The mean ebb velocity at a station in mid-channel was 2.21 foot-seconds, and the duration of the ebb tide was 5 hours and 55 minutes. If we assume the mean velocity of the entire section as 1.8 foot-seconds, which is probably not far wrong, we obtain an ebb discharge of 271,063,800 cubic feet. If a mean range of 2.1 feet over the entire tidal basin is assumed, this discharge gives its area as 4.63 square miles.

On July 26 the party returned to Saint Augustine, and on the following day the property and records were shipped to Jacksonville, and the party was disbanded.

GENERAL OBSERVATIONS.

The survey was made under some disadvantages. The chief of these was the intense heat, which lasted almost the entire time soundings were being taken, and rendered it physically impossible for transit observers and oarsmen to work in the sun longer than six hours per day. During this portion of the work all parties were exposed to the direct rays of the sun, and the days were rare when our thermometer indicated less than 115° Fahrenheit in the sun. Heavy seas on the bar during the latter part of June also seriously interfered with soundings.

It affords me great pleasure to invite your attention to the very efficient services of Assistants F. W. Bruce and J. H. Bacon, who at all times displayed great zeal and energy in the performance of their duties. Much credit is due Capt. Edward Allen, in charge of the whale-boat, for the able manner in which the boat was at all times handled, and especially so when sounding in the breakers.

With this report are submitted the following maps and plates:

MAPS AND PLATES.

Map or plate.	Description.
Map A	Map of Saint Augustine Harbor, Florida, scale 6,000.
Map B	Map of Saint Augustine Harbor, Florida, scale 30,000.
Map C	Comparative sketch of shore-lines, scale 30,000.
Map D	Map of Mantanzas Inlet, scale 6,000.
Plate 1	Tidal curves.
Plate 2	Cross-section of channel at entrance to harbor.
Plate 3	(3 Figs.) Relative direction and velocity of wind for eleven years, Figs. 1 and 2; and right line given by equation for rating current meter, Fig. 3.
Plate 4	Mean velocities for ebb and flood tides.
Plate 5	(7 Figs.) Fig. 1, comparative velocities in cross-section, showing velocity at 1 foot from bottom, 1 foot from surface, and mean velocity; Figs. 2 and 3, velocities during the entire flood tides at Buoys 4 and 6; Fig. 4, velocity and tide, ebb and flood, at Buoy 6; Figs. 5, 6, and 7, tidal curves.
Plate 6	Mean velocities during entire tides.
Plate 7	(3 Figs.) Method of using and rating current meter.
Plate 8	Diagram of borings.

Very respectfully, your obedient servant,

D. D. GAILLARD,
Second Lieutenant of Engineers.

Capt. W. M. BLACK,
Corps of Engineers, U. S. A.

TABLE I.—*Ebb tide.*

Number of buoy.	High tide.	Low tide.	Mean stage referred to low tide of the same day.	Mean stage above low tide in terms of range.	
	Feet.	*Feet.*			
6	3.9	−0.4	1.4	14/43	.326
6	3.7	−0.9	1.6	16/46	.348
5	3.8	−0.5	1.3	13/43	.302
4	3.7	−0.6	1.4	14/43	.326
3	3.5	−0.4	1.3	13/39	.333
2	4.3	−0.1	1.3	13/47	.273
1	3.4	−0.9	1.6	16/43	.372
Mean					.326

Mean range tide North Point, 4.33 feet. Hence mean ebb stage $=(4.33)\times(.326)=$ 1.41 feet (above mean low water).

Flood tide.

Number of buoy.	High tide.	Low tide.	Mean stage referred to low tide of same day.	Mean stage above low tide in terms of range.	
	Feet.	*Feet.*			
6	0.0	3.6	2.1	21/37	.583
5	−0.1	5.0	3.3	33/51	.647
4	0.0	4.7	3.3	33/47	.702
4	−0.6	3.8	2.8	28/44	.636
3	−0.7	3.2	2.8	28/39	.718
Mean					.657

Mean flood stage $=(4.33)\times(.657)=2.84$ feet (above mean low water). Difference between mean ebb and flood stages $=1.43$ feet.

TABLE II.—*Ebb discharge.*

Section.	Area.	Mean velocity.	Time.	Discharge.
	Square feet.		*Seconds.*	*Cubic feet.*
I	1646.5	1.42	23,400	54,709,902.0
II	7384.2	1.82	23,280	312,865,600.3
III	5759.7	1.57	23,130	209,157,651.0
IV	4368.1	1.52	22,350	148,392,825.0
V	5229.7	1.46	21,090	161,030,586.0
VI	8999.7	1.53	20,490	282,137,055.0
VII	7850.2	1.02	20,400	163,346,880.0
Total discharge				1,331,640,499.3

TABLE II (continued).—*Flood discharge.*

Section.	Area.	Mean velocity.	Time.	Discharge
	Square feet.		*Seconds.*	*Cubic feet.*
		0.15	2880	810,432.0
I	1875.9	−0.22	17760	−7,329,552.0
		0.11	2880	2,756,160.0
II	7790.9	−0.17	17760	−23,521,344.0
III	6142.3	0.96	17940	105,785,004.0
IV	4776.0	1.93	19830	182,786,991.0
V	5574.8	2.17	22620	273,640,926.0
VI	9374.8	2.51	23160	544,971,012.0
VII	7514.3	1.74	22800	298,107,720.0
Total discharge				1,378,007,349.0
Mean discharge				1,354,823,924.0

Area of tidal basin for this discharge, assuming a mean rise and fall over entire area of 2.1 feet 23.1416 square miles.

TABLE III.

Location.	Range.	Mean velocity entire tide.	Mean maximum velocity.	Duration tide.		Number stations.	Number tides observed.
Flood tide.				*H.*	*M.*		
Marsh Island	3.7	.81	1.26	5	36	1	1
Bird Island	3.2	.77	1.58	6	24	1	1
Ebb tide.							
Marsh Island	5.0	1.83	2.63	6	26	1	1
Bird Island	4.8	3.37	4.58	6	10	1	1

TABLE IV.

Section.	R.	C.	Maximum mean velocity.	S.	Distance between.	Fall.
			Foot-seconds.		*Feet.*	*Feet.*
Bird Island	17.1	99	2.58			
B	8.07	90	1.27	.000024	4320	.104
C	11.3	92	0.66	.000005	1750	.0037
D	28.5	104	0.18	.0000001	2220	.0002
Total					8290	.1129

NOTE.—The maximum mean velocity at Bird Island used above is the mean of the two results previously obtained.

TABLE VI.

Locality.	* Mean luni-tidal interval.	Mean range.	Difference in time from North Point of— High water.	Difference in time from North Point of— Low water.	Difference between highest and lowest tides observed.	Number of days observed.	Difference in level from North Point. Mid flood.	Difference in level from North Point. Mid ebb.	Duration of water slack. Low.	Duration of water slack. High.	Time between high tide and commencement of ebb.†	Time between low tide and commencement of flood.‡	Mean duration. Flood.	Mean duration. Ebb.
	h. m.	*Feet.*	*M.*	*M.*	*Feet.*		*Feet.*	*Feet.*	*M.*	*M.*	*h. m.*	*h. m.*	*h. m.*	*h. m.*
Bird's Island			+14	+44	5.1	4	+ 39	—.33	5	4	+1 08	+1 13	6 17	6 03
North Point		4.33	0	0	6.04	30			8.6	8.2	+1 06	+1 10	6 11	6 01
Gardner's Wharf				—18	4.72	2	— .25	+ .18						
Corbette Wharf	8 21	4.15	—22	—22	6.18	28	— .20	— .41						
Sebastian River		4.33	—59	—50	5.4	12	— .81	+ 70						
Matanzas Divide			—58	—59	5.9	7								
Matanzas Inlet			—25	—31	4.7	2			9	10	+ 27	— 11	6 13	5 55

+ Before; — after.
† High tide before ebb.
* From Coast Survey.
‡ Low tide before flood.

NOTES.—Mid flood and mid ebb slopes are means of slopes half an hour before and the same time after the period of maximum velocity. At the gauging section tide falls 0.55 foot before ebb begins, and raises 0.34 foot before flood begins.

COMMERCIAL STATISTICS OF SAINT AUGUSTINE, FLORIDA, FOR FISCAL YEAR ENDING JUNE 30, 1887.

[Collected by Henry A. Barling, jr., & Co.]

ARRIVED.

During the fiscal year ending June 30, 1887, there arrived at the port of Saint Augustine, Fla., coastwise, 1 steamer and 36 sailing vessels; and foreign, 8 sailing vessels with a total carrying capacity of 17,625 tons. Value of imports, $167,968. Total of crews, 254.

CLEARED.

All of the above vessels cleared during the fiscal year. Value of exports, $11,000.

Imports consisted chiefly of lime, cement, brick, coal, grain, hardware, and groceries; exports of lumber, chiefly cedar.

The total quantity of freight brought by railroads for the fiscal year ending June 30, 1887, was about 25,784 tons, valued at $728,877.

If it was possible for steamers of about 12 feet draught to enter this port at least half of this freigh twould come by water, for at least that quantity, both as to tonnage and value, was received on through bills of lading from New York.

PRELIMINARY EXAMINATION OF PUNTA RASSA HARBOR, FLORIDA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., January 5, 1887.

SIR: In obedience to Department letter of September 27, 1886, I have the honor to inclose herewith reports on preliminary examinations at the following places, viz:

Punta Rassa Harbor: * * * This harbor is situated on the east shore of San Carlos Bay, and is formed by a continuation of the north bank of the Caloosahatchie River south by east across the mouth of the river in the form of a long sand and oyster bar. The bar across the entrance to this harbor is in reality the bar dividing the deep waters of the Caloosahatchie River from those of San Carlos Bay. It has a least mean low-water depth of from 6 to 7 feet. Punta Rassa Harbor is of no importance excepting as the entrance to the Caloosahatchie River. Formerly a large number of cattle were shipped annually to Cuba from this port, but the trade has almost entirely died out. I have been unable to obtain the amount of export for the past season. A survey of the Caloosahatchie River has been authorized upon which to base plans for its improvement, for which an appropriation has been made. To make this complete it must include the Punta Rassa Bar. The importance of the Calooshatchie River has already been recognized by Congress. This importance will increase as the route via the canal and Lake Okechobee to Kissimme is opened. I therefore regard Punta Rassa Harbor as worthy of improvement.

A survey on which to base plans for its improvement would cost $700.

Respectfully submitted.

WM. M. BLACK,
First Lieut. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

SURVEY OF PUNTA RASSA HARBOR, FLORIDA.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., December 12, 1887.

In section 6 of the river and harbor act, approved August 5, 1886, it was directed that the Secretary of War, at his discretion, should cause an examination or survey, or both, to be made of this harbor, and the cost of its improvement to be estimated.

On January 5, 1887, the engineer officer in charge of this district reported the harbor as worthy of improvement. In Department letter of March 16, 1887, he was directed to make a survey of the harbor and to submit a project for its improvement.

The field work of the survey was commenced May 12, 1887, by a party in charge of Mr. J. W. Sackett, assistant engineer. Mr. Sackett's report, dated November 10, 1887, is appended.

Punta Rassa Harbor is situated near the entrance of San Carlos Bay, on the southwest coast of Florida. Nearly 3 miles north of the harbor, and of the settlement known as Punta Rassa, is the mouth of the Caloosahatchie River. The channel of this river at its mouth is turned abruptly to the south by a long sand and oyster bar which projects from the northern bank of the river. This river channel thus diverted forms the harbor, and it is only after passing Punta Rassa that it opens into the deep water of San Carlos Bay. The harbor of Punta Rassa is thus really the mouth of the Caloosahatchie River, and the bar at the entrance to the harbor is really the bar at the mouth of the Caloosahatchie River.

The bar is of silicious sand, and is apparently of drift and wave foundation. The least available channel depth on it is 7.5 feet. The depth in the harbor varies from 11 to 20 feet. The shortest distance across the bar between 11-foot contours is 1,800 feet. The distance between 11-foot contours along the line of the channel is 3,000 feet.

The map studied in connection with the Coast Survey chart shows that the general direction of the channel in front of Punta Rassa is due south, with a mid-channel depth of 20 feet. It continues thus for half a mile below; it then turns to the southeast and, shoaling as it advances, it, in conjunction with the Matlacha Channel, which embouches here, begins to spread over a fan-shaped area of nearly uniform depth. A ridge extends almost entirely across the upper part of this area from near buoy No. 6, in a direction a little north of west, with a depth over it of between 7 and 8 feet, except near buoy No. 6, where the depth for a narrow space slightly exceeds 8 feet. The northeastern boundary of this area is sharply defined by a shoal, with only about 1 foot of water over the greater part of it. A development of the contours for each foot shows that the channel has a decided tendency to keep close along this shoal.

The shoal forms a natural training-wall, and should a channel be dredged alongside it, it is believed that the shoal would remain as it is, preventing cross-currents and to a great degree insuring permanency in the dredged channel. In this it would be assisted somewhat by the ridge above referred to, on the ebb-tide.

* * * * * * *

A depth of 11 feet would satisfy the demands of the prospective commerce, and it is about all that can be carried over the lower shoal in the vicinity of buoy No. 2. (Report of Assistant Engineer J. W. Sackett.)

Considerable width would be required for the channel, as it would be used by sailing vessels mainly. A channel 11 feet deep and 200 feet wide, with side slopes of 1 on 5, is recommended. The position proposed is shown on the inclosed charts. Its estimated cost is as follows, viz:

Dredging 70,684.75 cubic yards, at 50 cents	$35,342.38
Engineering and contingencies, 15 per cent	5,301.36
Total	40,643.74

There is a good chance for permanence in the work if a channel of fair width could be dredged completely through the shoal under one appropriation. A cut too narrow, or one not extending completely through the shoal at full depth, would probably fill up wholly, or in part, within a year after it was made. A permanent channel could be insured by protecting the dredged cut by training-walls. The importance of the harbor is not yet sufficient to warrant the outlay these would require, and their construction is not now recommended.

COMMERCIAL INTERESTS.

Punta Rassa Harbor is of no commercial importance excepting at the entrance of the Caloosahatchie River. The deepening of the bar at the entrance to the harbor has long been desired by the inhabitants of the Caloosahatchie River Valley, who have petitioned that the money appropriated from time to time for the improvement of the Caloosahatchie River be expended there. The commerce of the valley is inconsiderable. It is, however, wholly dependent on water carriage; and an improvement of the entrance so as to admit the steamers of the Gulf lines would greatly assist in the development of the resources of the valley. The principal town on the river is Fort Myers, about 12 miles from Punta Rassa. The territory tributary to the Caloosahatchie River has been greatly increased by the opening of a water route to Kissimmee in Central Florida, through the drainage canals from Lake Okeechobee and the Kissimmee River. The principal exports from the valley are of subtropical fruits, honey, sirup, cattle, and hogs.

Respectfully submitted.

W. M. BLACK,
Captain of Engineers.

REPORT OF MR. J. W. SACKETT, ASSISTANT ENGINEER.

UNITED STATES ENGINEER OFFICE,
Jacksonville, Fla., November 10, 1887.

CAPTAIN: I have the honor to submit the following report on the survey of Punta Rassa Harbor, Florida:

The party in the field making the survey of the Caloosahatchie River, consisting of one assistant, one leveler, two recorders, and six boatmen, furnished with a steam-launch and two skiffs, proceeded to make the survey of Punta Rassa Harbor on May 12, 1887.

The United States Coast Survey stations at Punta Rassa, Point Ybel, and Bowditch Point were occupied and connected by triangulation with two stations that it was found necessary to establish on the shore between Punta Rassa and Bowditch Point, and the buoys and other channel marks were located.

As the instructions you gave were to extend the survey only so far as was necessary to supplement the charts of the United States Coast and Geodetic Survey, the soundings were restricted principally to the channel and the basin of San Carlos Bay, which forms the principal part of Punta Rassa Harbor. The soundings over the shoal portions of the harbor and the topography between the triangulation stations were left to be supplied from the above charts. The topography in the immediate vicinity of the stations was carefully located to facilitate the location of the stations in reference to the topography as given on the Coast Survey charts. That portion of the channel in the vicinity of buoys No. 4, No. 6, and No. 8 was more thoroughly sounded than elsewhere, it being the shoalest part of the channel and the point at which works of improvement are particularly required.

The triangulation was completed, over three thousand soundings were taken, a meridian was established at Punta Rassa to determine the declination of the magnetic needle, and the topography located, as above noted, completing the field-work of the survey by May 17.

The field-work has been plotted, and the map* is herewith submitted. The map,

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*Omitted.

sailing toward the southeast from Point Pleasant protects the bay from the heavy sea the Gulf.

A depth of 11 feet would satisfy the demands of the prospective commerce, and all that can be carried over the lower shoal in the vicinity of buoy No. 2.

The bottom is generally rather soft, and is composed of silicious sand and broken sh

Estimate of cost of dredged channel.

Bottom width.	Depth.	Cubic yards.	Cost
	Feet.		
200 feet	11.0	38,951.65	$22,397
200 feet	11.6	57,818.55	33,245
200 feet	12.0	70,684.75	40,643
100 feet	11.0	30,402.72	11,731
110 feet	11.6	30,580.80	17,383
100 feet	12.0	37,654.45	21,651

In the calculation to obtain the quantities the measurements in place are increased per cent. to allow for the increase of bulk when loaded in scows. A side slope of 5 o is allowed. The cost is taken at 50 cents per cubic yard increased 15 per cent. for gineering, etc.

It would be difficult for sailing vessels to navigate a channel of less width than 2 feet, and, as in dredging it is necessary to allow 1 foot for back filling, to secure a dep of 11 feet, the calculation for a width of 200 feet and a depth of 12 feet would be one required.

The cut would require to be 3,400 feet long to connect the 11-foot contours wit width of 200 feet.

Very respectfully, your obedient servant,

J. W. SACKETT,
Assistant Engineer, in charge of Survey.

Capt. W. M. BLACK,
Corps of Engineers.

COMMERCIAL STATISTICS.

[Furnished by Mr. Peter Nelson, Fort Myers, Fla.]

The incoming freight during the fiscal year ending June 30, 1887, consisted of lumb machinery, and general merchandise; estimated value, $70,000. The outgoing for t same period consisted of cattle, hogs, honey, sirup, and general farm produce.

The whole of the trade is dependent on the water carriage. It would be increas

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 88.

OHIO RIVER NEAR EVANSVILLE, INDIANA; BIG HOCKHOCKING RIVER, OHIO, AND LOUISA FORK OF SANDY RIVER, VIRGINIA.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

With a letter from the Chief of Engineers, reports of the examinations and surveys of the Ohio River near Evansville, Indiana; Big Hockhocking River from its mouth to Coolville, Ohio, and of Louisa Fork of Sandy River, Virginia.

JANUARY 17, 1888.—Referred to the Committee on Rivers and Harbors and ordered to be printed.

WAR DEPARTMENT,
Washington City, January 10, 1888.

The Secretary of War has the honor to transmit to the House of Representatives a letter of the 6th instant from the Chief of Engineers, with copies of reports from Lieut. Col. W. E. Merrill, Corps of Engineers, giving the results of surveys of the Ohio River, near the city of Evansville, Ind., with a view to determine what, if anything, will be necessary to prevent a change of the channel of the river in front of that city; of the Big Hockhocking River from its mouth to Coolville, Ohio; and of Louisa Fork of Sandy River, Virginia; and also copies of the preliminary examinations of the same, made to comply with the requirements of the river and harbor act of August 5, 1886.

WILLIAM C. ENDICOTT,
Secretary of War.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

OFFICE OF THE CHIEF OF ENGINEERS,
UNITED STATES ARMY,
Washington, D. C., January 6, 1888.

SIR: I have the honor to submit herewith copies of reports to this office from Lieut. Col. W. E. Merrill, Corps of Engineers, of the results of surveys of the Ohio River, near the city of Evansville, Ind., with a view to determine what, if anything, will be necessary to prevent a change of the channel of the river in front of that city; of the Big

PRELIMINARY EXAMINATION WITH A VIEW TO A SURVEY OF THE OH
RIVER, NEAR THE CITY OF EVANSVILLE, INDIANA, TO DETERMIN
WHAT, IF ANYTHING, WILL BE NECESSARY TO PREVENT A CHANGE O
THE CHANNEL OF THE RIVER IN FRONT OF THAT CITY.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 1887.

GENERAL: I have the honor to submit the following report on th preliminary examination ordered by the river and harbor act of Augu 5, 1886, "for a survey of the Ohio River near the city of Evansvill Ind., with a view to determine what, if anything, will be necessary t prevent a change of the channel of the river in front of that city."

The examination was made by Lieut. Lansing H. Beach, Corps Engineers, and his report is submitted herewith.

I have to state that in my judgment the locality is "worthy of im provement" to the extent of justifying a careful survey, and I estima the cost of such a survey at $2,200. The survey should cover a leng of 30 miles of river and the whole surface of the peninsulas opposi Evansville, Ind., and Henderson, Ky., in order to give a basis for a intelligent discussion of the questions involved.

It is possible that the survey will develop facts which may make unnecessary for the United States to do any work at this locality; b this can not be determined without such survey.

The necessity for this survey is due to the fact that there is an app rent possibility that the Ohio River may make a new channel across th peninsula opposite Evansville. Should such an event occur, the riv commerce of Evansville would be most seriously injured, if not whol destroyed; and the general commerce of the Ohio River would undoub edly be embarrassed during the formation of the new channel, and th embarrassment might be permanent in case the new channel shou prove an objectionable one.

Respectfully, your obedient servant,

WM. E. MERRILL,
Lieut. Col. of Engineers.

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

determine what, if anything, will be necessary to prevent a change of the channel of the river in front of that city.

The object of this examination was to determine whether there is or is not any danger of the river's making a cut-off through the neck of the peninsula opposite the extremity of which Evansville is situated. That it will do so, and thus leave the city several miles inland, has been feared by the citizens for some time. To enable an intelligent answer to be given in this regard requires such a knowledge of all the conditions prevailing as can be obtained only by an accurate survey. There are, apparently, sufficient grounds to justify the apprehension felt by the inhabitants of Evansville, and I have to recommend that the survey be made.

Very respectfully,

LANSING H. BEACH,
First Lieutenant of Engineers.

Lieut. Col. W. E. MERRILL,
Corps of Engineers, U. S. A.

SURVEY OF THE OHIO RIVER, NEAR THE CITY OF EVANSVILLE, INDIANA, TO DETERMINE WHAT, IF ANYTHING, WILL BE NECESSARY TO PREVENT A CHANGE OF THE CHANNEL OF THE RIVER IN FRONT OF THAT CITY.

UNITED STATES ENGINEER OFFICE,
Cincinnati, November 16, 1887.

SIR: The river and harbor act of August 5, 1886, contained the following item:

For a survey of the Ohio River near the city of Evansville, Indiana, with a view to determine what, if anything, will be necessary to prevent a change of the channel of the river in front of that city.

The duty of making this survey having been assigned to me, I have the honor to submit the following report:

The city of Evansville is situated at the apex of a very sharp bend of the Ohio River, the peninsula opposite Evansville having a length of 6½ miles and a minimum width of 1⅓ miles. The total water front of the peninsula is 15 miles, and its whole surface is, on an average, about 12 feet below flood level, the extreme oscillation of the river at Evansville being 47.8 feet.

For many years flood water passed over this peninsula without attracting much attention or showing much effect on the surface; but during the high floods of recent years the surface has been considerably degraded, and a number of ravines have been excavated on the upper side of the peninsula, which gradually flatten out and become wide and shallow depressions as they reach the central line. As the soil is fertile, though very light, the crops are valuable, and pretty much the whole area has been cleared and cultivated. Whenever a flood comes of sufficient height to go over the ground the whole surface is denuded to the depth of the plowing, and each year the land is flooded at a lower gauge-reading. At the base of the peninsula there is a wide swamp known as Mound Slough. Only a very small portion of this ground has been cleared, and observation shows that in the slough the surface is gradually rising by deposits. A similar condition has been noticed in other parts of the peninsula where ravines and gullies have been abandoned and allowed to grow up with weeds and bushes.

On the Mississippi River, where island chutes are very common, it has been noted that the river hardly ever shows a disposition to deepen and enlarge them into a low-water channel, notwithstanding the fact that strong currents run through these chutes at high water, and that

ther lowering of the surface of the peninsula, leaving the question bank protection in abeyance until the necessity for action becomes m evident.

The simple and natural method of accomplishing this result wo be to build a levee along the axis of the peninsula, extending it to insubmersible hills at its base. Two lines for such a levee were s veyed, and the estimated costs of the two are $305,000 and $317,0 respectively, the length being 6½ miles and the average depth of fl water 12 feet. The top of the levee has been placed at 4 feet above fl level, in order to allow for the raising of the flood line that would low from keeping the entire discharge within the natural banks. the above estimates is included $15,000 for the land on which the le is to be built. Another method, that would probably be effectu would be to purchase a strip of ground along the line of the propo levee, plant it thickly with trees and bushes, and let it stand as a ing barrier to catch drift and sediment, and reduce the velocity of overflow. In my judgment such a barrier would gradually restore height of the area above it by deposits of sediment, and the owner the farms on the peninsula could well afford to combine to dedicate maintain such a strip of woodland. A width of 500 feet would suff and the area thus withdrawn from cultivation would contain about acres of arable land and 50 acres of swamp, and would be worth at c rent rates about $30,000. While this land would probably fill up w trees and bushes without cost, it would yet be advisable to expedite m ters by planting. This would cost about $40 per acre, making a to for 300 acres, of $12,000. To protect the strip from cattle and from t ber thieves it ought to be inclosed by a wire fence, but an unbrok fence would not do, as transverse roads across the strip would be nee in order to preserve communication between the two sides of the pen sula. The road from Evansville to Henderson crosses the line of t proposed forest levee near Mound Slough, and at least four other cro ings would be required. To fence both sides of these five crossings a to inclose the two ends would call for about a mile of fence, and the miles of length would call for 13 miles more, making a total of 14 mi of wire fencing. The cheapest variety of such fence, consisting of po 16 feet apart, and four strands of barbed wire, cost $350 per mile. T

The total estimate is therefore as follows:

Purchase of land	$30,000
Planting trees	12,000
Wire fencing	4,900
Engineering and contingencies	2,100
Total	49,000

The law requires the engineer in charge of a survey to state whether or not the locality is "worthy of improvement," and "what public necessity or convenience may be subserved thereby." In case the Ohio River should break through the peninsula opposite Evansville, it would probably have no effect on through commerce, but would very injuriously affect the commerce of Evansville, and would therefore injuriously affect almost the whole commerce of this part of the Ohio River, as no boat passes Evansville without stopping, except a few tow-boats bound for distant markets. It is therefore a public necessity that such an occurrence should be prevented. While I do not think a cut-off is seriously threatened at this present, I still think that it would be a judicious expenditure to purchase and maintain a barrier of woodland and thicket along the axis of the peninsula.

For further details, reference is made to the annexed report of Mr. J. N. Caldwell, assistant engineer, who was in charge of the survey.

Accompanying this report is a map* of the locality and a sheet containing longitudinal and cross sections of the proposed levee.

Respectfully, your obedient servant,

WM. E. MERRILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF J. N. CALDWELL, ASSISTANT ENGINEER.

CINCINNATI, OHIO, *October* 22, 1887.

SIR: The river and harbor act of August 5, 1886, ordered "a survey of the Ohio River near the city of Evansville, Indiana, with a view to determine what, if anything, will be necessary to prevent a change of the channel in front of that city."

By your order of June 7, 1887, the charge of this survey was assigned to me, and I have the honor to submit the following report of work done:

Opposite Evansville, Ind., is a peninsula, formed by a bend in the river called the "horseshoe" or "Henderson bend." A survey was made of this peninsula. The general outline of this peninsula resembles that of a human foot with the toe directed towards Evansville.

The distance from the apex of the peninsula to the high ground at the base is 35,000 feet, while the width varies from 4,800 feet to 11,600 feet. The surface is low, being entirely covered with water when the Evansville gauge shows a stage of 42 feet.

The surface soil is very light, being composed largely of sand, and is easily eroded by the water. The soil, being quite fertile, is devoted to crop raising, and most of the trees and bushes have been cleared from the land to fit it for this use. As a consequence, one passing over the peninsula encounters numerous sloughs that have been cut across it by the water. Each rise that covers the land cuts the slough deeper and wider, until at last there seems to be danger that the entire river may leave its old channel and cut through the peninsula. The question might naturally be asked, Is this danger any greater now than at any time during the past twenty or thirty years? I think that it is, principally for the reason that the present owners of the land seem to look only to the present, and have used extra diligence in clearing off the trees and bushes. This is especially noticeable on the tract said to be owned by Dr. Harding. I was informed by a man who has cultivated this tract for a number of years, that the former owner maintained a strip of timber along the river bank, which the present

*Omitted.

owner has almost entirely cleared away, and, as a consequence, the tract has been literally cut to pieces by the floods of the last few years, rendering it almost unfit for cultivation.

The tract south of this one, now owned by Mr. Bennett, is also very badly cut up, and it is here that there is the greatest danger of a cut-off being made, as through this tract the sloughs are most numerous and deepest, and the distance across the peninsula is short, being only 7,900 feet.

There is one important feature that I noticed particularly. Wherever the property owners have neglected to cultivate the soil, the vines, bushes, and trees have grown up rapidly, and by arresting the current at time of high water have caused deposits of soil to be made. Several sloughs, that I was informed had at one time been deep and dangerous, have since filled up to a considerable extent because the owners have ceased to cultivate them, and allowed nature to have her way. The left bank of the river is concave, and is cutting badly, so that the neck of the peninsula is being reduced in two ways.

Your orders to me were "to run a line along the axis of the peninsula from the apex to ground that was above the high water of 1884."

High water of 1884 corresponds with a height of 47.8 feet on the Evansville gauge. I first ran a line of levels from the gauge to a point opposite the apex of the peninsula. The line of levels was run up Fulton avenue for a distance of 1,923 feet. Fulton Avenue is the highest street in the principal part of Evansville. Our line was then carried across the river, and run as nearly as practicable along the axis of the peninsula. Frequent bench-marks were made. For a distance of 25,000 feet the north and south boundary line of property owners corresponds very nearly with the axis, and I should have followed this line exactly, but in order to do so it would have been necessary to do some clearing of bushes and trees, and these are too valuable to be removed. The profile obtained is essentially the same as though the axis had been followed exactly. From a point 20,000 feet from the apex two lines were run to a swamp called "Mound Slough." One of these follows the axis, and for a distance of 4,250 feet is very close to the Henderson and Evansville road; the other is 1,525 feet further east. After reaching the swamp, I deemed it best to make a detour to reach the high ground; otherwise it would have been necessary to do a great deal of clearing, a thing which it was not desirable to do. A line was run around the peninsula so as to determine its outline; the principal sloughs were run out, and the roads and houses were located. As far as practicable, the owners of the different tracts of land were ascertained, and the property lines were approximately located. I submit herewith a plan* and profile.*

The solidity of a levee 8 feet wide on top with side slopes of 1 on 3, allowing 20 per cent. for shrinkage, if built on the axis of the peninsula, would be 1,450,687 cubic yards, and would cost, at 20 cents per cubic yard, $290,137.40. If built on the other line, with the same form and same allowance for shrinkage, the solidity would be 1,508,908 cubic yards, and would cost, at 20 cents per cubic yard, $301,781.60.

In order to build either of these levees it will be necessary to have a strip of land 35,000 feet long and 250 feet wide, so as to give the necessary width of base and to furnish barrow pits.

This tract will contain about 200 acres, which will cost, at $80 per acre, the price at which I am informed the land can be bought, $16,000. Land can probably be bought more readily along the axis than along the other line, for, as mentioned in another place, the axis corresponds with the boundary line between property owners for a distance of 25,000 feet from the apex of the peninsula, and a man will, naturally, be more willing to sell a strip off of one side of a tract than through it.

The section of the water-way, at the time of high water of 1884, was 556.347 square feet. Should a levee be built this would be reduced to 134,168 square feet.

I have been unable to obtain sufficient information in reference to the velocity of the current at the time of high water of 1884 upon which to base an estimate of the probable increase of flood height at Evansville in case a levee should be built as proposed.

I think that a good protection against the danger of a cut-off being made would be for the United States to buy a strip of land along the axis of the peninsula and plant it with trees and bushes. Such a strip, 35,000 feet long and 500 feet wide, containing about 400 acres, would cost, at $80 per acre, $32,000. This tract could be thickly planted with young trees and bushes for about $40 per acre, or $16,000 for the whole.

Very respectfully, your obedient servant,

J. N. CALDWELL,
Assistant Engineer.

To Col. W. E. MERRILL,
Corps of Engineers.

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* Omitted.

PRELIMINARY EXAMINATION OF THE LOUISA [LEVISA] FORK OF SANDY RIVER, VIRGINIA.

UNITED STATES ENGINEER OFFICE,
Cincinnati, Ohio, January 20, 1887.

GENERAL: In accordance with the instructions contained in Department letter of September 27, 1886, I have to submit the following report of the preliminary examination of the Louisa [Levisa] Fork of Sandy River, Virginia.

An examination and report upon this portion of the Levisa Fork of the Big Sandy River was submitted by Lieut. Col. W. E. Merrill, Corps of Engineers, in 1876, and printed in the Annual Report of the Chief of Engineers of that year, pages 140 to 146, Part II. The recent examination made in compliance with the instructions received confirms the facts ascertained and stated in the former report. It extended from the State line of Virginia to the mouth of Dismal Creek, a distance of 23 miles. This stream flows through a sparsely-settled country, in which the majority of the people are engaged in cutting and rafting logs. The only improvement asked for is the removal of trees, snags, and rocks, and the closing of duplicate channels, so that the logs can be brought to market without so great a risk and percentage of loss.

This stream is deemed worthy of improvement to this limited extent, which will only require the expenditure of a small amount. No additional survey is necessary. It is estimated that the cost of all the work to be done will probably not exceed $250 a mile, or a total of $5,750. Any appropriation that is made, however small, can be advantageously expended. The portion of the Fork in Kentucky has already been improved.

Very respectfully, your obedient servant,

JAS. C. POST,
Major of Engineers.

Brig. Gen. JAMES C. DUANE,
Chief of Engineers, U. S. A.

SURVEY OF THE LOUISA [LEVISA] FORK OF SANDY RIVER, VIRGINIA.

UNITED STATES ENGINEER OFFICE,
Cincinnati, November 25, 1887.

SIR: I have the honor to submit the following final report on the survey of "Louisa Fork of Sandy River, Virginia," ordered in the river and harbor act of August 5, 1886:

The Louisa Fork of the Big Sandy River may be considered as beginning at the mouth of Dismal Creek, which is exactly 23 miles above the line separating the States of Virginia and Kentucky. In this distance the fall of the river is 328 feet, being at the rate of 14¼ feet per mile. With such a fall it is evidently useless to attempt any improvement other than the removal of obstructions.

The preliminary examination of this part of the Big Sandy River was made in the latter part of 1886 by Mr. M. W. Venable, assistant engineer, under the direction of my predecessor, Maj. James C. Post, Corps of Engineers, and the preliminary report was submitted by Major Post on January 20, 1887. In this report it is stated that the total cost of the

needful work would not exceed $5,750, and that advantageously expended.

It will be observed that in his report to Major annexed, Mr. Venable states that this part of t not worthy of improvement. I find on inquiry tion was based on the fact that there is a stret between the Virginia State line and the mout which nothing has as yet been done to improve as the writer considered himself limited by his i sideration of the particular stretch which he wa he decided that he could not recommend the im part of a river while the lower part remained river been clear below the State line, Mr. Vena mended that the clearing-out process be extend Dismal.

Believing that the removal of obstructions ab inevitably cause the removal of those below it, I mit an estimate for improving this stretch of the

Mr. Venable states that he does not believe th product will be much increased by the removal business is in the hands of a few men who alread ber as can be rafted during a season. It seems sion is not warranted by experience on other facilities have always been followed by an inc judgment, the small sums heretofore expended this section of the country have produced relativ the vastly greater sums expended on rivers that a boats; and I am decidedly in favor of the con within reasonable limits. The smaller streams t the Alleghany Mountains are not navigable, and gable except for the inconsiderable commerce th boats; but, on the other hand, their headwater the finest timber within the United States, and, i demand for timber, and the depletion of other sou to me of the first importance to increase the fa market the vast supplies that lie on the western nies. The lands that grow this timber are too st no damage will result from the periodical rem trees. The beds of the streams are more or less ch that have fallen from the mountain sides, so t practically impossible to drive timber, even whe supply of water. In my judgment, the removal the general clearing up of the beds of the strea free passage of logs whenever there is a suppl benefit that fully justifies the very small outlay To assist in bringing this timber to market is t wealth, as otherwise a large part of this particul and decay without benefit to any one.

I therefore cordially concur in Major Post's $5,750 be appropriated for the improvement of Fork of the Big Sandy River.

The output of timber for 1886, according to the hereto annexed, was 300,000 cubic feet, valued a

For fuller details of the portion of the Big San the mouth of Dismal Creek and Pikeville, referen

of January 6, 1876, which may be found in the Report of the Chief of Engineers for 1876, Part II, page 140.

Respectfully submitted.

WM. E. MERRILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF M. W. VENABLE, ASSISTANT ENGINEER.

CINCINNATI, OHIO, *December* 17, 1886.

SIR: Under your letter of instructions of November 24, I made a preliminary examination of the Louisa Fork of Big Sandy River in Virginia, and beg leave to submit the following report:

The physical characteristics of the stream, its tributaries and the country through which they flow have been well and fully described in the report of Maj. Wm. E. Merrill, January, 1876, to which I would respectfully refer you; so I shall only note the present condition and value of the stream as a means of transportation and an estimate of products now being shipped out by it.

My examination extended from the Virginia and Kentucky State line to the mouth of Dismal Creek, the largest tributary above Buchanan Court-House and the highest point up the stream from which rafting is practicable, a distance of 25¼ miles. I find the stream a wild mountain torrent, full of shoals, rocks, and islands; pools of quiet water, few and short, and generally formed by small dams placed at the head of shoals, supplying power to the small grist-mills of the country. These dams are made of brush and stone (in some instances of timber), and vary in height from 1 to 3 feet. They all obstruct navigation by rafts more or less; but, on the other hand, furnish short pools of quiet water in which timber can be safely rafted and tied up awaiting the tides to take it out, so that any project for improving the stream should not include in the estimate the cost of removing these dams, except where they have been abandoned by their owners, but only the removal of rocks, and, where the stream has divided into two or more channels, to confine it by dikes to the most direct and best one.

I found on examination that there are thirty-seven points on the stream where the channel can be improved in this way at an average cost of $250 each, making an aggregate cost of $9,250.

No improvement can make this stream available for purposes of navigation, except for rafts and such forest products as can be rafted or floated out singly, such as logs, cooper stuff, cross-ties, telegraph poles, hoop poles, and forest products generally (except tan bark).

The timber of this valley is of the finest quality, both oak and poplar, and the usual percentage of other woods; and as the lumbermen have, until recent years, confined themselves to the tributary in Kentucky, the timber here is practically untouched, nothing but poplar and a few walnut logs having been sent out. The business of logging seems to be in the hands of only a few men, from whom, and also by actual estimate, I learned that the output for this season will be 300,000 cubic feet, which at present market value will amount to $42,000. These men also state that, owing to the hazardous navigation, they only take out the finest trees and those nearest the stream, whereas with the stream improved they could nearly double the product at much less than double the cost of labor, and risks proportionately reduced.

While the improvement of the stream would undoubtedly increase the market value of the product by lessening its cost of transportation, I doubt if the annual output will be materially increased by it, owing to the fact that the available product is in the hands of a few men, who can only accomplish a certain amount of work in a given season.

Owing to the rapidity of the stream, any work done on it might be of questionable, or at best only of temporary, aid to navigation, and, in view of the limited commercial importance of its products, and the small number of people to be benefited thereby, I consider the stream as unworthy of improvement, and do not consider any further survey necessary.

Respectfully,

M. W. VENABLE,
Assistant Engineer.

Maj. JAS. C. POST,
Corps of Engineers.

Lieut. Col. of Engineer

Brig. Gen. J. C. DUANE,
Chief of Engineers, U. S. A.

REPORT OF LIEUTENANT LANSING H. BEACH, CORPS OF ENGINEERS.

UNITED STATES ENGINEER OFFICE,
Cincinnati, January 11, 18

SIR: I have the honor to submit the following report on the preliminary exam tion of the Big Hockhocking River from its mouth to Coolville.

The Big Hockhocking, or Hocking, as it is more generally called, rises abou miles south of east of Columbus, Ohio, and, flowing first southerly, then southe erly, empties into the Ohio about 12 miles below Parkersburgh, W. Va., after a co of about 80 miles.

The object desired is to have the overhanging trees cut down, and obstruction the channel removed so that the lighter draught boats navigating the Ohio can, on medium and higher stages of that river, turn in and run up to Coolville, about 5 m from the mouth of the Hocking. Coolville is a village of about 500 inhabitants, the center of a rich farming country, the larger part of whose produce, it is clai would seek outlet by river were it possible for boats to reach that point. It is no sired to render the stream navigable above Coolville, at which place there is a across the river furnishing water-power to a large flouring-mill. It is not expe that any coal will be brought down from the Upper Hocking, but that Pittsburgh will be brought by river at a much lower rate than is now afforded by the railro At present boats do occasionally run up to Coolville, on the higher stages in the O but this is not frequently attempted on account of the danger from overhanging t and a few large rocks in the channel, but were these removed it is probable that local packets would run to Coolville regularly, and other boats quite frequently.

The object desired can be effected at a very small cost, and the advantages wl would result to commerce will apparently more than justify the expenditure ne sary. The locality is worthy of improvement.

An estimate of the amount required to carry out the desired improvement can made without resorting to a survey of the river.

Very respectfully,

LANSING H. BEACH,
First Lieutenant of Engineer

Lieut. Col. W. E. MERRILL,
Corps of Engineers, U. S. A.

EXAMINATION OF THE BIG HOCKHOCKING RIVER FROM ITS MOU

The Big Hockhocking is a small stream that empties into the Ohio about 12 miles below Parkersburgh. It is navigable for a distance of 5 miles, but only when there is good navigable water in the Ohio. The town of Coolville, at the head of the navigable stretch, has a population of about 500, and lies in a rich farming country that needs an outlet by water. A small expenditure would remove the overhanging trees and the few rocks that now make navigation hazardous, and would enable Ohio River boats to run up to Coolville whenever business justified such a trip. The estimated cost of doing the necessary work is 5,000, and, in my judgment, the benefit to the people justifies this moderate expenditure. For detailed estimates, reference is made to the annexed report of Lieut. L. H. Beach, Corps of Engineers.

Commercial statistics of the Hockhocking were difficult to obtain, and can only be considered as approximate. It is reasonable, however, ' believe that river freights will be largely increased whenever the navigation of the river is made comparatively safe. Such information on this subject as I could get is contained in the accompanying letters from Hon. C. H. Grosvenor and from Captain Huntington.

Respectfully submitted.

WM. E. MERRILL,
Lieut. Col. of Engineers.

The CHIEF OF ENGINEERS, U. S. A.

REPORT OF LIEUTENANT LANSING H. BEACH, CORPS OF ENGINEERS.

ZANESVILLE, OHIO, *November* 22, 1887.

SIR: I have to submit the following report of work necessary to render the Big Hockhocking River navigable from its mouth to Coolville, a distance of 5 miles, including an estimate of the amount of money necessaryto complete the same.

To render this portion of the river safely navigable, a number of trees which are overhanging must be cut down, some snags and rocks must be removed from the channel, and a bar below the dam at the upper end of the proposed improvement will have to be dredged away.

The items of work and their cost may be named and estimated as follows:

130 trees to be trimmed, at $1.50	$195
88 trees to be removed, at $3	264
20 snags to be removed, at $3	60
800 cubic yards of rock to be removed, at 50 cents	400
9,000 cubic yards of dredging to be done, at 40 cents	3,600
	4,519
Contingencies, about 10 per cent	481
Total	5,000

It is believed that the proper expenditure of this sum will be sufficient to secure all that is desired of the proposed improvement, which is to enable the regular Ohio River boats to turn into the Big Hockhocking and run up to Coolville, when the former river is at a sufficiently high stage to allow them to make their regular trips.

But few boats have attempted this in the past few years, owing to the danger to their upper works from overhanging trees and projecting limbs, which danger is aggravated by the narrowness of the river, it being but 100 feet to 200 feet in width. The snags and rocks are comparatively few, and can all be removed without trouble during low water. The principal expense of the contemplated improvement will be in digging away a small bar in the river about 1,200 feet below the dam at Coolville, but, as far as can be ascertained, this bar is composed of fine material, and its removal will not be attended with difficulty, although the price per yard has been estimated at 40 cents to cover the cost of disposing of the spoil. The bar to be removed is about 800 feet long, 100 feet wide, and requires a cut of about 3 feet in depth.

No estimate is made for tools or plant for use in removing the trees and rocks, as

the prices allowed for doing the labor are considered sufficiently high to cover their cost.

Very respectfully,

LANSING H. BEACH,
First Lieutenant of Engineers.

Lieut. Col. W. E. MERRILL,
Corps of Engineers.

LETTER OF HONORABLE C. H. GROVENOR.

GALLIPOLIS, OHIO, *November* 10, 1886.

SIR: Your letter of November 5 is received. The preliminary examination of Big Hockhocking involves an examination of so much of the river as lies from Hockingport up to Coolville, a distance of 5 miles. The supposition is that by a small expenditure of money the overhanging trees may be removed, logs taken out, a small amount of dredging done, and it may be the removal of one rock called, as I recollect it, "The Old White Horse," lying about half way from Coolville to Hockingport. It is believed that with this amount of expenditure by the Government the small packets plying between Parkersburgh, Pomroy, and Gallipolis may, during a good portion of the season, turn up Hocking that short distance and carry away products from a large flouring mill, now destroyed, but being rapidly rebuilt.

Very respectfully, your obedient servant,

C. H. GROVENOR.

LANSING H. BEACH,
Lieutenant of Engineers.

LETTER OF IRA B. HUNTINGTON.

HOCKINGPORT, OHIO, *October* 31, 1887.

SIR: Yours received some time ago in regard to slack-water navigation of the Hocking River. At the present time there is shipped from Coolville, 5 miles up, 100 barrels flour per day, 200 to 300 bushels feed, and, I think, 75,000 to 100,000 bushels wheat, and about the same of corn would come out of the river yearly. General merchandise, $50,000 per year in Coolville. As to the amount of coal that would come out I can not make any estimate, but a vast amount.

Colonel, the general commerce of the Hocking Valley is immense and would be increased to a large extent if we had the facility of water transportation. Fruit, wool, etc., is raised up the river in large quantities, also lumber, tan bark, etc. Col. C. H. Grosvenor, our Congressman, can give you an idea of what the commerce is.

Our country is all in hopes the matter will be pushed forward, and the work will be commenced. I was away from home when your letter came.

Hoping to hear from you again,

I am yours, etc.,

IRA B. HUNTINGTON.

Col. W. E. MERRILL,
Corps of Engineers.

O

50TH CONGRESS, 1st Session. } HOUSE OF REPRESENTATIVES. { EX. DOC. No. 89.

URGENT DEFICIENCY ESTIMATES.

LETTER

FROM

THE SECRETARY OF THE TREASURY,

TRANSMITTING

Estimates from the Secretary of the Navy, to be considered in connection with the urgent deficiency appropriation bill.

JANUARY 18, 1888.—Referred to the Committee on Appropriations and ordered to be printed.

TREASURY DEPARTMENT,
January 14, 1888.

SIR: I have the honor to transmit herewith, for the consideration of Congress, estimates of deficiencies in appropriations submitted by the Secretary of the Navy, which he desires shall be included in the urgent deficiency bill under consideration by the Committee on Appropriations, as follows:

Steel cruisers, construction	$83,691.25
Steel cruisers, ordnance	175,000.00
Steel cruisers, navigation	2,500.00
Contingent, Marine Corps, 1888	1,500.60
Contingent, Marine Corps, 1887 and prior years	1,116.83

Respectfully, yours,

C. S. FAIRCHILD,
Secretary.

The SPEAKER OF THE HOUSE OF REPRESENTATIVES.

NAVY DEPARTMENT,
Washington, January 13, 1888.

SIR: I have the honor to transmit herewith additional estimates of urgent deficiency appropriations, required for objects under the control of this Department, viz:

For completing and providing an armament for the steel cruisers:	
Bureau of Ordnance	$175,000.00
Bureau of Navigation	2,500.00
Bureau of Construction and Repair	40,000.00
	217,500.00
To reimburse appropriation "Construction and Repair 1888," for amount expended therefrom on the steel cruisers	43,691.25
	261,191.25

DOES NOT CIRCULATE

Explanations of these estimates will be foun
copies of letters from the chiefs of the respectiv

I take this occasion to call your attention t
me to you on the 28th ultimo, inclosing an esti
master of the Marine Corps for $5,000, an addi
for the construction of officers' quarters at the
Cal. (See House Ex. Doc. No. 35, Fiftieth C
This additional amount is absolutely required
to be commenced, and if it be not appropriated
session the barracks could not be completed du

Very respectfully,

W. C

Hon. C. S. FAIRCHILD,
Secretary of the Treasury.

Estimates of appropriations required for the service of the fle
by the Bureau of Construction and E

Detailed objects of expenditure, and explanation

INCREASE OF THE NAVY.

Steel cruisers: Construction—
To reimburse appropriation "Construction and Repair" for 1888,
from said appropriation for work done on the steel cruisers *C*
Atlanta .....
To complete the *Chicago* .....
To complete the *Boston* .....

Total .....

NAVY DEPARTMENT, BUREAU OF CONSTR
W

SIR: I have the honor to inclose a statement showin
the steel cruisers out of appropriations "Construction
that the sum of $43,691.25 be appropriated to refund thi
tion "Construction and Repair," 1888, as it is absolutely
under this appropriation.

I also request that the House Committee on Naval App
propriate the sum of $30,000 to complete the *Chicago*,
Boston, making a total of $83,691.25.

I am sir, very respectfully, your obedient servant,
T

Chief Constructor, U.

Hon. W. C. WHITNEY,
Secretary of the Navy.

NAVY DEPARTMENT, BUREAU OF CONSTRU
W

Amounts expended on steel cruisers out of appropriation
1885 .....
1886 .....
1887 .....
1888 .....

Amount required to complete Chicago .....
Amount required to complete Boston .....

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, *by the Bureau of Ordnance.*

Detailed objects of expenditure and explanations.	Total amount to be appropriated under each head of appropriation.
Steel cruisers: Ordnance— To supply a deficiency in the appropriation for the armament of the steel cruisers *Chicago*, *Boston*, and *Atlanta*, see appended detailed statement below (March 3, 1883; July 7, 1884; March 26, 1886; July 26, 1886)	$175,000
NOTE.—A considerable part of the ordnance outfit of the *Boston* and *Chicago* still remains to be completed, and it is estimated that the additional amount asked for will be required. Amount of previous appropriations for armament of *Chicago*, *Boston*, *Atlanta*, and *Dolphin*, $923,631.67.	

BUREAU OF ORDNANCE, NAVY DEPARTMENT,
Washington City, December 17, 1887.

SIR: The armament of the steel cruisers authorized by the act of March 3, 1883, is still incomplete, and for some time past but little work has been done upon them on account of want of funds.

It seems very important for the service that these vessels should be armed as soon as possible, and in order to complete their armament the sum of $175,000 is required.

It is respectfully suggested that this amount be asked of Congress as an urgent deficiency.

I am, sir, your obedient servant,

MONTGOMERY SICARD,
Chief of Bureau.

Hon. W. C. WHITNEY,
Secretary of the Navy.

Estimate of the cost of completion of the armament of the Boston and Chicago, with cost of a few articles yet required for the Atlanta.

Main batteries of *Boston* and *Chicago*, equipment, shields, and deck circles and permanent fittings	$81,930.99
Secondary batteries of *Boston* and *Chicago*, fittings and equipments	10,646.46
Ammunition for main batteries of *Boston* and *Chicago*	43,406.38
Stores and miscellaneous articles for *Chicago*	2,000.00
Small-arm ammunition, revolvers, and revolver ammunition for *Boston* and *Chicago*	9,163.00
Installation of armament of *Boston* and *Chicago*	14,000.00
Installation of electric search-light plant, *Chicago*	2,200.00
Deck circles and shields for *Atlanta*	9,634.00
Proof of guns, handling and firing at Naval Ordnance Proving Ground	2,046.00
Aggregate	175,026.83

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, *by the Bureau of Navigation.*

Detailed objects of expenditure, and explanations.	Total amount to be appropriated under each head of appropriation.
Steel cruisers: Navigation: For completing the navigation outfit of the *Chicago*, including compass binnacle and electric-lighting supplies	$2,500

BUREAU OF NAVIGATION, NAVY DEPARTMENT,
Washington, January 9, 1888.

SIR: I have the honor to submit the following statement of the liabilities of this Bureau under the appropriation "Steel cruisers: Navigation," namely:

There is due to steam engineering for work and material in connection with the installation of the electric-lighting plant of the *Boston*	$1,334.24
Contract for the electric-lighting plant of the *Chicago*	8,045.00
Total	9,379.24
Balance in Treasury	9,174.91
Deficiency	204.33

To complete the navigation outfit of the *Chicago* there will be further expenditures for one compensating binnacle, electric-light supplies, etc., and I have the honor to request that an additional appropriation of $2,500 be asked for to meet the necessary expenditures under "Steel cruisers: Navigation."

Very respectfully,

J. G. WALKER,
Chief of Bureau.

The SECRETARY OF THE NAVY.

Estimates of appropriations required for the service of the fiscal year ending June 30, 1888, *and for prior years, by the Quartermaster's Department U. S. Marine Corps.*

Detailed objects of expenditure and explanations.	Total amount to be appropriated under each head of appropriation.	Amount appropriated for the fiscal year for which the appropriation is required.
MARINE CORPS.		
Contingent, Marine Corps:		
To pay bills on file for gas-oil used in manufacture of gas, and for repair of gas pipes, gas, water, straw, freight, stationery, telegrams, cartage, rent of telephone for fiscal year ending June 30, 1887, and for prior years. (July 26, 1886; vol. 24, p. 157, sec. 1)	$1,116.83	[illegible]
To pay bills on file for per diem pay to enlisted men for fiscal year ending June 30, 1888. (March 3, 1887; vol. 24, p. 592, sec. 1)	1,500.60	[illegible]
NOTE.—In the above amount of "deficiency contingent" is included the sum of $1,500.60, due as per diem to enlisted men employed on constant labor as clerks and messengers for a period not less than ten days (see Book of Estimates, page 129, 1888). This amount covers the extra duty pay due to thirteen enlisted men detailed on "special duty" as clerks and messengers at the headquarters of the Marine Corps and its various staff officers here at Philadelphia and San Francisco, in compliance, not only with lawful orders of the Secretary of the Navy, but also made mandatory by Army regulations, based upon Revised Statutes and the requirements of the Army appropriation bill for fiscal year 1885; the item was included in the "estimates," Contingent Marine Corps, 1888, but omitted in the appropriation bill for that year, possibly by a clerical or typographical error. The amount of "deficiency contingent" also includes bills on file for gas-oil, gas, repair of gas fixtures, etc.; these bills were not presented until some time after the close of the fiscal year, and the appropriation was exhausted; the amount being in excess of that of previous years, and also in excess of the amount set apart to meet the expenditure.		